teri school of advanced studies
— Deemed-to-be University —

ACCREDITED WITH GRADE A NAAC
National Assessment & Accreditation Council

25 YEARS teri School of Advanced Studies

PUBLIC POLICY & SUSTAINABLE DEVELOPMENT

Internship & Final Placement Brochure

M.A. in Public Policy & Sustainable Development

2024-26 Cohort

Placement Cell, MA-PPSD
Department of Policy & Management Studies

TERI School of Advanced Studies
10, Institutional Area, Vasant Kunj
New Delhi - 110070

About TERI SAS

Established in 1998, the TERI School of Advanced Studies (TERI SAS) is a pioneer institution in India, dedicated to providing world-class education in the fields of sustainable development, public policy, and environmental studies. Recognised as a Deemed-to-be University, TERI SAS was born out of the vision of The Energy and Resources Institute (TERI), a globally renowned think tank, to create a cadre of professionals capable of addressing the complex, interlinked challenges of the 21st century.

The university serves as a vibrant hub for multidisciplinary learning. Its curriculum is uniquely designed to bridge the gap between theoretical academic knowledge and practical field application. TERI SAS offers a diverse range of Master's and Doctoral programmes that integrate the sciences, social sciences, and technology to foster holistic problem-solving.

Pioneering Legacy

One of India's first institutions to focus exclusively on sustainability and the environment

Research-Led Education

Students learn from a faculty of distinguished scholars and practitioners who are actively involved in global policy discourse

Green Campus

Campus itself is a living laboratory, featuring climate-resilient architecture and resource-efficient systems that reflect the university's core values

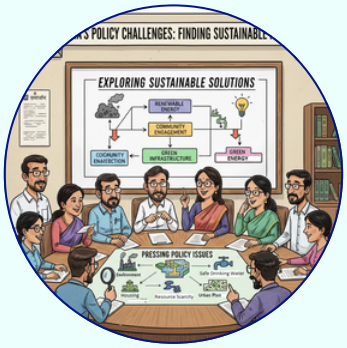
Strategic Location

Being in the national capital provides students with unparalleled access to ministries, international NGOs, industry leaders, and policy-making bodies

About MA–PPSD

A comprehensive programme for aspiring public policy professionals

Provides holistic perspective of complex development issues through multidisciplinary learning



Analysis of pressing policy issues and exploring sustainable solutions

Focus on the core competencies demanded by today's policy landscape – critical thinking, problem-solving, communication, large-scale data analysis, policy analysis, project management, etc.

Immersive classroom learning with faculty from diverse backgrounds, collaborative peer learning, and interactions with industry experts

Offers opportunities to network with policymakers, practitioners, and researchers

Programme Structure

Semester I

- Public Policy: A Concise Exposure
- Social Policies & Sustainable Development
- Research Methods for Public Policy
- Economics for Public Policy
- International Collaborative Studio on Public Policy
- Policy Lab - I: Sectoral Policy Scoping
- Public Administration and Systems Management
- Sustainable Production and Consumption: Policy and Practices
- Globalization and Changing Geopolitics: Implications for Economic & Foreign Policies

Semester II

Core Courses:

- Policy Lab - II: Developing a Policy Paper
- Public Policy Assessment: Methods & Measurements
- Water and Sustainable Development: Policies & Management
- Energy and Sustainable Development
- Digital Economy: Dividends, Disputes & Dimensions
- Infrastructure Development and Sustainability: Issues & Policy Perspectives
- Industrial Development & Sustainability: Policies, Performance & Practices
- Climate Change and Cities: Policies & Practices
- Sustainable Urbanization

Elective Courses:

- Fundamentals of Environmental, Social, and Governance (ESG) Principles
- Agriculture and Rural Development
- Contracts Law and Management
- Qualiative Research Methodology for Urban Studies
- Competition law and policy

Semester III

Major Project I

Semester IV

Major Project II

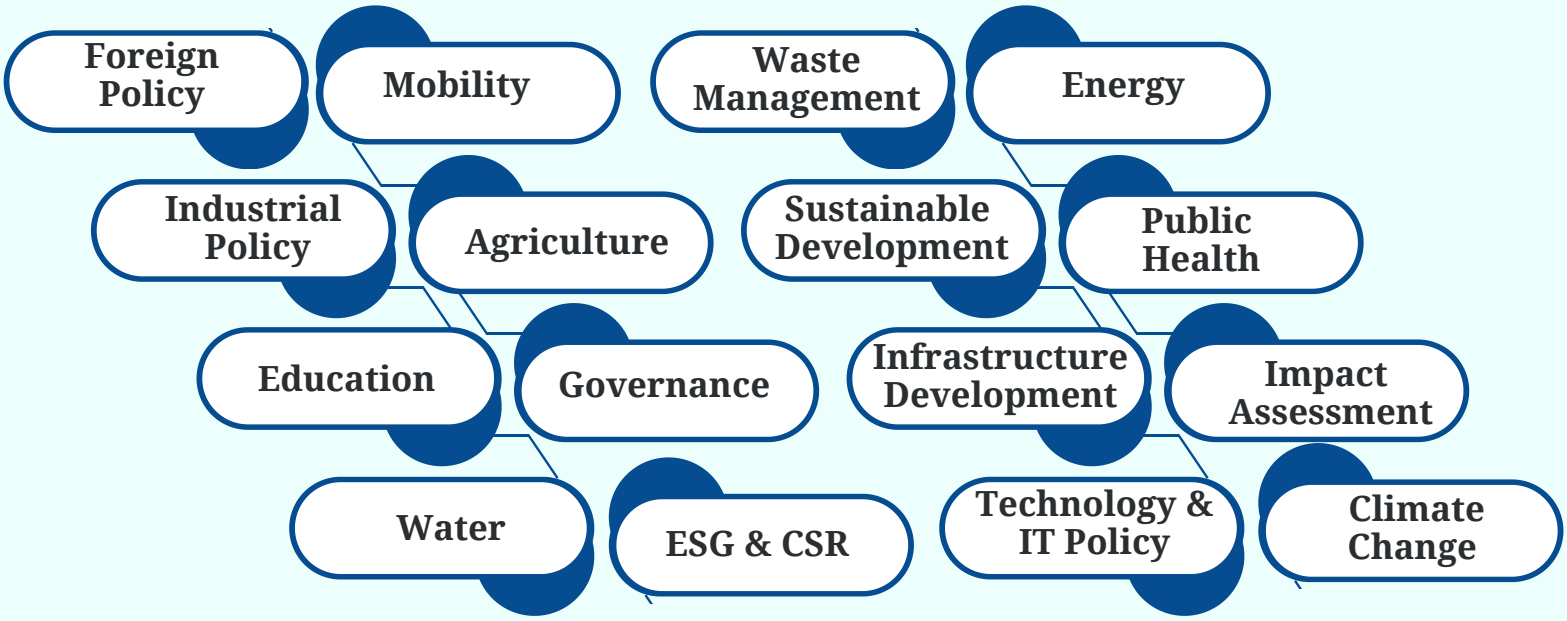
Major Project

The Major Project is a capstone project that serves as a culminating academic and intellectual experience for students and engages them in independent research on a question or problem of their choice, requires the application of knowledge and skills acquired during their studies. The Project challenges students to connect their work to broader knowledge, sharpening their critical thinking, problem-solving, and communication skills.

After getting an internship opportunity by an organization, the student is expected to get acclimatized with the working environment in the organization for an initial few weeks while simultaneously exploring the suitable topic for carrying out policy-oriented research under the mentorship of an external supervisor from the host organization and an assigned supervisor from the TERI SAS. Students get a semester long period to conceptualize, work, and prepare a Major Project Thesis to be submitted to the Programme and the Department.

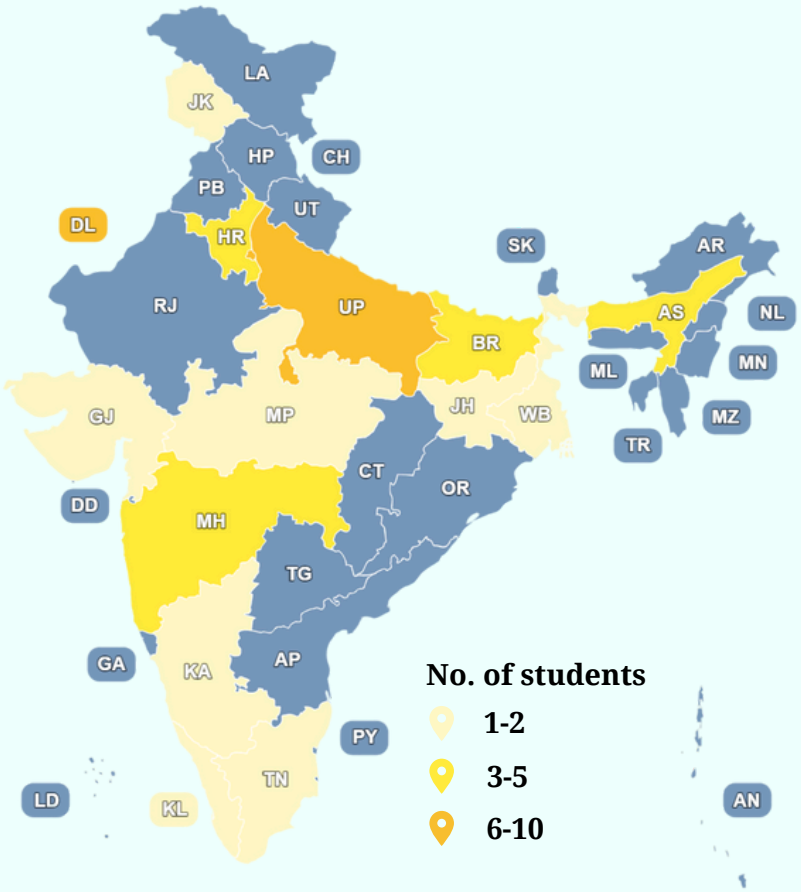
Capstone Project	Duration
Capstone Project I	Mid-August to end of December 2025
Capstone Project II	Mid-January to end of May 2026

Key Areas of Interest

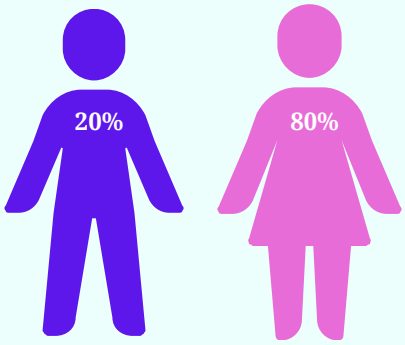


MA-PPSD Cohort 2024-26

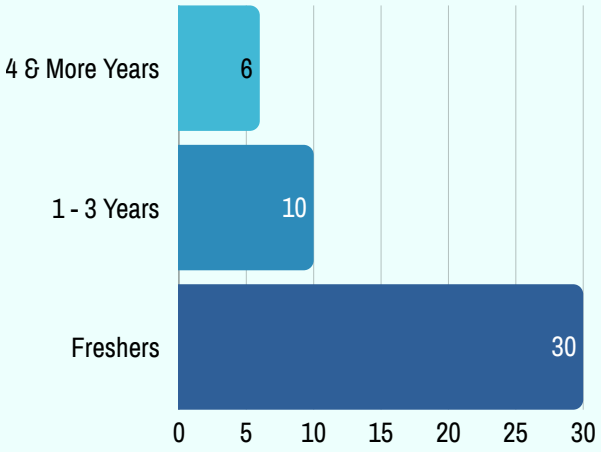
Regional Affiliation



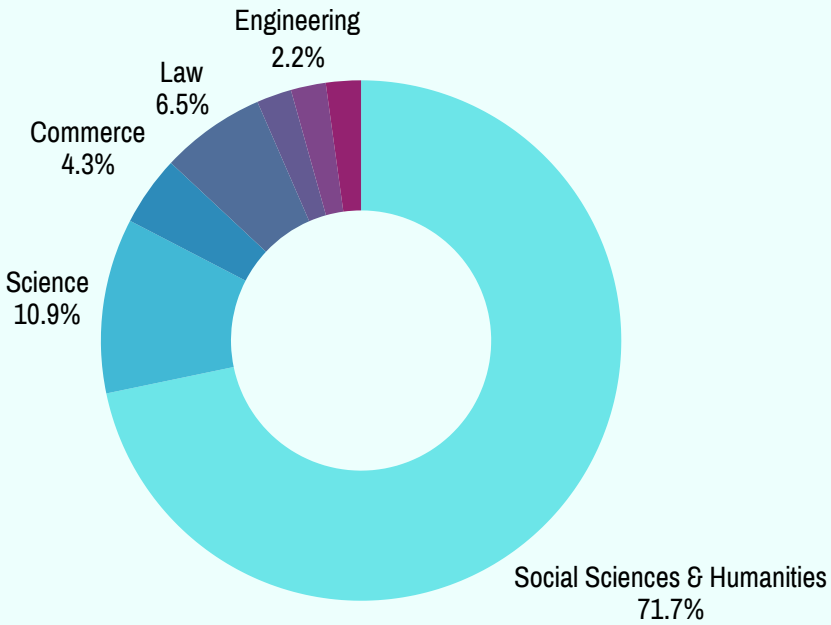
Gender Representation



Work Experience



Prior Disciplinary Background



Key Skills

Stakeholder Management

Policy Design

Program Implementation Strategy

Policy Analysis & Evaluation

Policy Advocacy

Student Profile

Major Project-I Internship

Adrij Thakur

EB: B.A. (H) in Political Science, 2024
Motilal Nehru College
University of Delhi

AI: ESG & CSR,
Agriculture & Rural Development,
Waste Management,
Climate Change

ORG: Oil India Limited (OIL)
TRA: ESG
Activities carried out in Host Organization:

- Accounting and reporting aspects of the company's Business Responsibility and Sustainability Reporting (BRSR)
- Comparative assessment of Oil India's BRSR practices against Global Sustainability frameworks
- Benchmarking analysis of Oil India's sustainability reporting with that of other leading Public Sector Undertakings (PSUs)

Akshita Malviya

EB: B.A. in Political Science
& History, 2024
Deshbandhu College
University of Delhi

AI: AI Ethics, Digitalization,
Climate Change, Sustainability,
Green Economy, Urban Governance

SI: Analysis for the State Urban Plan,
Participated in stakeholder
consultations & round-table meetings

ORG: Indian Forum For Public Diplomacy (IFPD)
TRA: Just Transition, Social Inclusivity Gaps,
& Land Conflicts
Activities carried out in Host Organization:

- Policy analysis; Data Interpretation
- Stakeholder mapping to identify justice-linked gaps in India's just transition landscape
- Developed a policy brief on India's just transition with key challenges and actionable recommendations to support equitable transition strategies.

Amrutha RS

EB: Integrated M.Sc. in Economics, 2018
Pondicherry University
PG Diploma in Foreign Trade

AI: Green Economy, ESG and CSR,
Energy, Industrial & Labour Policies

PWE: Assistant Project Manager,
Archival & Research Project

ORG: The Energy and Research Institute (TERI)
Centre for Climate Change & Research Division
TRA: Climate Finance
Activities carried out in Host Organization:

- Contributed to the evaluation of the PM-KUSUM scheme through stakeholder interactions, field insights, and secondary data analysis

---

Ankita Gayen

EB: B.A. (H) in Political Science, 2023
Scottish Church College
University of Calcutta

AI: Energy, Education,
Gender, Climate Change

ORG: The Energy and Research Institute (TERI)
TRA: Agri-PV
Activities carried out in Host Organization:

- Contributed to pilot projects and analysis of Agri-PV projects in India, analyzing international and domestic experiences in this sector

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Anshu Kumari

EB: B.A. (H) in Economics, 2024
JD Women's College
Patliputra University

AI: Sustainable Urbanisation, Energy, Agriculture & Rural Development, Gender Studies

ORG: The Energy and Research Institute (TERI)

TRA: Nuclear Energy, Just Energy Transition

Activities carried out in Host Organization:

- Contributed to research and development of report on Small and Medium Nuclear Reactors
- Contributed to other projects in the domain of energy too
- Actively engaged in stakeholder consultations and in organizing workshops and seminars

---

Aqsareha M.

EB: B.Sc. in Biotechnology, 2022
Fergusson College
Savitribai Phule Pune University
Diploma in Women Empowerment & Development, 2024

AI: Social Impact, Law & Governance, Energy, Sustainable Urbanization, ESG & CSR

SI: STEPP Bootcamp under Member of Parliament Dr. Fauzia Khan (Learning Policy Research & Legislative processes)

PWE: Intern at the Ministry of Jal Shakti, Government of India

ORG: TATA Trusts

TRA: STEM Education,
Digital Health & Nutrition Monitoring (Poshan Tracker)

Activities carried out in Host Organization:

- Provided hands-on training to government school Science & Mathematics teachers in the tribal regions of Mount Abu, Rajasthan, focusing on holistic and experiential teaching methods
- Contributed to developing a STEM education support framework and undertook field visits to government schools in West Bengal and Himachal Pradesh to study experiential learning practices
- Engaged with communities to explore WASH, Nutrition, and ECCE initiatives, and gained practical insights into the development and functioning of water recharge and conservation structures through participatory fieldwork

---

Arushi Varma

EB: B.A. (H) in Political Science, 2024
Sri Venkateswara College
University of Delhi

AI: Sustainable Urbanisation, Climate Change, ESG, CSR, Waste Management

ORG: GIZ India

TRA: Waste Management, Resource Efficiency

Activities carried out in Host Organization:

- Supported circularity-related projects, namely, EU-I RECEI, CP4Plastic, and Circular Economy Solutions (CES) preventing Marine Litter in Ecosystems.
- Data collection & analysis, stakeholder consultations, and facilitating speaker sessions & workshops
- Contributed to research, documentation, and the development of communication materials and digital content

---

Ayushree Kamle

EB: B.M.M. (Journalism), 2020
Sophia College for Women
University of Mumbai

AI: Policy Simulation & Analysis, Policy Advocacy, ESG, CSR, Climate Change, Social Impact & Governance

SI: Management Trainee at CMAI

PWE: 3 Yrs. 11 Ms.; Analyst, Campaign Operations, I-PAC; Manager, Funds & Projects, Qause; News Trainee, BloombergQuint (now NDTV Profit)

ORG: Confederation of Indian Industries (CII)
ITC Centre for Sustainable Development

TRA: ESG, Circular Economy

Activities carried out in Host Organization:

- Resource & stakeholder mobilisation on the current BRSR and EPR regulatory frameworks through industry/sectoral assessments and gap analysis
- Assisted the team with evidence-based research, documentation, and content development
- Contributed to online and offline communication and outreach strategies
- Prepared drafts for the organisation's monthly, quarterly, annual, and donor reports

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Bhargavi Prakriya

EB: B.A. (H) in Economics, 2024
Gargi College,
University of Delhi

AI: ESG & CSR, Climate Change,
Social Impact,
Sustainable Urbanization

ORG: PwC India

TRA: Climate Resilience, Strategy Development

Activities carried out in Host Organization:

- Preparation of RFP (Request for Proposal)
- Conducted background research for consultancy projects, primarily focusing on water asset security and urban planning

---

Bhavna Pratihari

EB: B.A. (H) in Sociology, 2024
Sri Venkateswara College,
University of Delhi

AI: ESG & CSR, Climate Change,
Sustainable Urbanisation,
Waste Management

SI: Interned at National Council of Applied Economic Research (NCAER); worked on survey research and statistical analysis for large-scale policy studies; Involved in questionnaire design, handling and validating survey data using STATA, and secondary data analysis

ORG: Gujarat Mineral Development Cooperation (GMDC)

TRA: Corporate Social Responsibility (CSR) - Education, Health, Skill Development

Activities carried out in Host Organization:

- Responsible for overseeing key functions in the management and coordination of development initiatives implemented by GMDC–Gramya Vikas Trust across education, health, and community welfare
- Responsibilities include programme planning, progress monitoring, gap analysis, and on-ground implementation to ensure alignment with project objectives
- Additional responsibilities involved conducting qualitative enquiry, supporting secondary research, preparing analytical materials such as financial and case-based documentation, and engagement with stakeholders at multiple levels

---

Bhavya Kharbanda

EB: B.A. (H) in Political Science, 2024
Gargi College
University of Delhi

AI: Climate Change, Energy,
Law and Governance,
ESG & CSR

PWE: Intern at NITI Aayog,
Government of India

ORG: Emerson CoE for Sustainability Studies, TERI SAS

TRA: Climate Governance, Just Energy Transition

Activities carried out in Host Organization:

- Contributed to qualitative and quantitative data collection, collation, and analysis using diverse tools
- Supported stakeholder engagement
- Assisted in formulating a recommendatory framework for government stakeholders
- Conducted literature reviews; developed survey design; and contributed to report writing

---

Devyani Srivastava

EB: B.A. in Economics & Sociology, 2023
Sophia College for Women
University of Mumbai

AI: Waste Management,
Sustainable Urbanisation,
Climate Change & Governance

SI: Senior Ambassador, Sustainability Ambassadors Global Exchange (SAGE) Program (2025 Cohort): Undertook an independent secondary research project on Municipal Solid Waste Infrastructure (MSWI) in Indian cities — mapping infrastructural gaps across the waste value chain, applying a climate resilience lens

ORG: Global Impact Changeship Fellow
Connecting Dreams Foundation (CDF)

TRA: Climate-Resilient Livelihoods

Activities carried out in Host Organization:

- Involved in 2 projects: 1) Project CLIP (Climate Leadership Integration Program); 2) Project UDAAN (SHG-women Agripreneur Empowerment: Skill Development, Business Scaling, and Climate-Resilient Livelihoods)
- Supported both projects through research, stakeholder engagement, opportunity mapping, field observations, documentation, development of training modules & toolkits, and facilitation of capacity-building sessions

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Devashree Velukar

EB: B.Sc. in Aeronautics - Avionics, 2019
University of Mumbai

AI: Sustainable Urbanization, Digitization, Infrastructure Policies, Climate Change

ORG: The Energy and Research Institute (TERI)

TRA: Water Conservation & Positivity

Activities carried out in Host Organization:

- Supported research on sustainable water management by developing a policy framework for water positivity at airports
- Responsibilities included literature review, policy analysis, preparing reports
- Contributed to data-driven recommendations for integrated water management, reuse, and recharge

---

Gunpreesh Kaur

EB: B.Sc. in Economics, 2023
Sarla A. Modi School of Economics
NMIMS (Deemed-to-be University)

AI: ESG, Urban Governance, Industrial & Labour Policies, Climate Change, Energy Policy

PWE: Research Intern and Volunteer, ASER Centre, Research wing of Pratham Education Foundation; Research Assistant (Enumerator), Peace Research Institute Oslo (PRIO); Research Intern, IGIDR

ORG: Grant Thornton Bharat LLP

TRA: ESG and India's low-carbon transition

Activities carried out in Host Organization:

- Assisted with gap analysis, identification of material topics, peer benchmarking, aligning corporate strategy with the right ESG framework, data collection & management
- Drafted reports for different clients belonging to varied sectors
- Enhanced knowledge of various international and Indian ESG standards
- Developed skills in materiality assessment, business writing, and data analysis

---

Himanshi Joshi

EB: B.Sc. (H) in Psychology, 2022
Christ University

AI: Social Impact, Diversity and Inclusion, Education, Policy Simulation, Governance

PWE: Intern at Fortis; Edupsych; Cognizavest; Psychowaves

ORG: Receipient of WICE Fellowship, Climate Collective Foundation (CCF)

TRA: Green Transition

Activities carried out in Host Organization:

- Involved in Market Research, Customer Value Proposition, Customer Validation Proposition, as well as Competitor and Ecosystem Analysis in the space of Climate Tech.

Ishaan Dhar

EB: B.A. in Social Sciences, 2024
Tata Institute of Social Sciences, Tuljapur

AI: ESG & CSR, Agriculture & Rural Development, Waste Management, Climate Change

ORG: Ernst & Young (EY)
Strategy and Transactions Department

TRA: Solar Energy

Activities carried out in Host Organization:

- Involved in preparing and maintaining a comprehensive database aimed at facilitating ease of doing solar projects under EY's collaboration with the International Solar Alliance (ISA)
- This work included data collection, policy mapping, regulatory tracking, and identifying investment barriers across different jurisdictions related to solar project development
- Volunteered during the 8th Session of the ISA Assembly; supported coordination activities, stakeholder facilitation, and documentation tasks
- Assisted in power trend analysis for Sikkim and Arunachal Pradesh, focusing on energy demand patterns, capacity assessments, and potential areas for renewable energy expansion

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Khyaati Sharma

EB: B.A. in English Literature, 2019
Shoolini University, HP
University of Delhi;
M.A. in English, 2021
Symbiosis College of Arts & Commerce, Pune

AI: Climate Change, ESG & CSR, Sustainable Urbanization, Digitization

PWE: Intern at CIS; Project Statecraft; Office of the DDC, Udhampur (J&K); TERI SAS, New Delhi; Shoolini University; The Indian Express, Panchkula

ORG: Lead India Learning Bridge Foundation

TRA: Skill Development

Activities carried out in Host Organization:

- Developed the LEAD Internship programme and contributed to organisational strategy, policy planning, and institutional design
- Involved in establishing CoE; fostering collaborations with mentors, policymakers, and professionals to enhance youth engagement and leadership in public policy

---

Krish Agarwalla

EB: B.A. (H) in Sociology, 2024
Fergusson College
Savitribai Phule Pune University

AI: Education, Resource Efficiency, Sustainable Urbanization, Industrial & Labor Policies, Agriculture & Rural Development

ORG: The Energy and Research Institute (TERI)
Center of Resource Efficiency and Governance

TRA: Critical minerals in context of India- Africa collaboration

Activities carried out in Host Organization:

- Contributed to projects on the Critical Mineral Mission; worked on India's international engagements, trade and domestic value chain of critical minerals, as well as various aspects of circularity
- Contributed to policy papers undertaken under the project
- Involved in other projects at the Center, which provided me exposure to skills such as life cycle assessments and administration of survey questionnaires using Kobo Toolbox

---

Kumar Rohit

EB: B.A. (H) in Sociology, 2023
SGDM College,
Patliputra University

AI: Climate Change, Climate Governance, Climate Diplomacy, Energy Policy, ESG, Waste Management

ORG: Ministry of Environment, Forest, and Climate Change (MoEFCC), Government of India
Climate Change Division

TRA: Climate Governance

Activities carried out in Host Organization:

- Involved in compiling and organising key negotiation documents from COP, SBSTA and SBI meetings for the Climate AI Chatbot Project
- Contributed to developing a state-wise database of mitigation and adaptation strategies
- Assisted in preparing datasets such as NDC submission status, SAPCC budget allocations and inputs for Parliament Questions

---

Nandini Vats

EB: B.A. (H) in Philosophy (with Mass Com.), 2023
Indraprastha College for Women
University of Mumbai

AI: Legislative Research, Just Transition, Urban Resilience Policies, Governance

PWE: 3 Ys; Communication & Branding Specialist, Advertising & Brand Agencies (2021-24); Research Intern in the office of Hon'ble MP Mr.Charanjit Singh Channi; Research Intern, CPRG

ORG: POLSTRAT

TRA: Political Economy

Activities carried out in Host Organization:

- Engaged in comprehensive political and policy research across states such as Uttar Pradesh, Bihar, and West Bengal, focusing on electoral trends, governance issues, and parliamentary developments
- Assisted in campaign strategy formulation and candidate documentation, encompassing data validation and analysis
- Contributed to parliamentary committee support policy documentation, survey evaluation and legislative research for the Member of Parliament

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Padmanjali Chauhan

EB: B.A. in History-Pol. Science, 2023
Sophia College for Women
University of Mumbai

AI: Education, Agriculture & Rural Development, Climate Change, Law & Governance

ORG: TATA Trusts

TRA: Water Access, Water Security

Activities carried out in Host Organization:

- Developed 2 policy briefs on: 1) Achieving water security in the Indian Himalayan Region through Springshed Management, and 2) Achieving groundwater security in the plains of India - with a special focus on Maharashtra
- These were written with the intention of getting the solutions integrated into state policy
- Visited intervention sites of the Trust; semi-structured interviews were conducted with beneficiaries and other stakeholders to understand solutions

---

Priyani Pranab

EB: B.Arch., 2021
Vellore Institute of Technology
(Deemed to be University)

AI: Sustainable Urbanisation, Water, Infrastructure Policies, Climate Change

PWE: 3 Ys; Associate, Urban Design - Jana Urban Space Foundation, Bengaluru (2023-24); Mobility Champion - Young Leaders for Active Citizenship, New Delhi (2023); Freelance Designer (2021-2023); RA - Madras Inherited, Chennai

ORG: PwC India

TRA: Sport for Development (S4D)

Activities carried out in Host Organization:

- Conducted research, analysed policies and institutional frameworks, and supported problem-solving for client engagements as an Advisory intern
- Worked with cross-functional teams to develop insights, benchmark global practices, and contributed to deliverables across the sports, tourism, and infrastructure sectors

---

Radhika Birwal

EB: B.A. (H) in Political Science, 2015
Gargi College, University of Delhi;
M.A. in Political Science, 2017,
DAV College, Panjab University;
PGD in International Education

AI: Waste Management, Sustainable Urbanization, Climate Change, ESG & CSR

PWE: 4 Ys; Teacher of Global Politics (Grade 11 & 12) at DPS International; Teacher (Grade 7–9) at Indus International School, Hyderabad

ORG: International Solar Alliance (ISA)
Technology Roadmap and Policy Pillar

TRA: Energy Storage System in Mauritius

Activities carried out in Host Organization:

- Involved in building a roadmap for renewable energy transition in ISA member nations, especially LDCs & SIDS
- Currently associated with Programs focused on Storage, E-mobility and Green Hydrogen
- Supported technology sessions related to Storage, E-mobility and Green hydrogen in Regional committee meetings, Clean Energy Ministerial, ISA assembly, and international workshops

---

Rishi Prasanna

EB: B.A. in Political Science, 2018
Madras Christian College
University of Madras;
M.A. in Defence & Strategic Studies, 2022
Guru Nanak College,
University of Madras

AI: Education Policy & Governance, Digital Learning & EdTech, Curriculum Innovation, Inclusive & Skill-Based Education

ORG: UEducate

TRA: Gamified & Interactive Learning Frameworks

Activities carried out in Host Organization:

- Worked on the product development of a NEP 2020–aligned Learning Management System (LMS) integrating AI-driven adaptive assessments, virtual lab experiments, VR-based learning and gamified content
- Focused on transforming traditional textbooks into competency-based digital learning experiences and contributing to operations, content development and graphic design, including 3D content creation and educational 3D animation videos for enhanced curriculum–technology integration

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Sai Sathya Singh

EB: B.A. in Economics, 2023
SSS Institute of Higher Learning (Deemed to be University)

AI: Social Impact, Energy, ESG & CSR, Climate Change

PWE: Intern at NITI Aayog and Previu Health

ORG: SKOCH Group

TRA: Digital Sovereignty and Security

Activities carried out in Host Organization:

- Involved in designing an indicator-based framework to analyse digital sovereignty approaches of major economies, to derive policy lessons for India
- Strengthened my skills in policy analysis, data interpretation, and comparative research for strategic policy insights

---

Sankalp Mishra

EB: B.A. (H) in IR & Foreign Policy, 2022
Jindal School of International Affairs, Jindal Global University

AI: Energy, Sustainable Urbanization, Social Impact, Climate Change

PWE: 3 Ys; Public Policy Research Centre, Polstrat, Centre for Middle East Studies, Greenpeace India

ORG: Emerson CoE for Sustainability Studies, TERI SAS

TRA: Energy Transitions, Sustainable Manufacturing

Activities carried out in Host Organization:

- Contributed to two sustainability and energy-focused research initiatives: the K-WASH Policy Framework for the IPSA Kumbh Project 2025 (by the Ministry of Jal Shakti & NMCG) and a Net-Zero Roadmap for universities
- Led quantitative & qualitative analyses of survey responses using ATLAS.ti, Excel & STATA
- Conducted stakeholder consultation meetings; Co-designed a Power BI analytics dashboard for the IPSA Kumbh Project
- Wrote the sections of the final report analyzing the drivers and pressures of WaSH services during Maha Kumbh
- Conducted the preliminary literature review, identifying 8 thematic areas, and assessed the baseline of emissions generated for the Net Zero Project

---

Shambhavi Mukherjee

EB: B.A. LL.B. (H), 2024
Amity Law School, Noida

AI: Public Health, Gender Studies, Sustainable Development, CSR, Climate Change, Textiles, ESG, Water, Waste Management

PWE: Intern at the Chambers of Ms. Pinky Anand, Former Add. Solicitor General of India and Ms. Geeta Luthra, Senior Adv., Supreme Court of India

ORG: PHD Chamber of Commerce and Industry (PHDCCI)
Sustainability Vertical

TRA: Decarbonization, Green Transition, Hard-to-abate Sectors

Activities carried out in Host Organization:

- Involved in research and stakeholder engagement

Shipra Shriti

EB: B.A. in Political Science, 2024
Indraprastha College for Women University of Delhi

AI: Foreign Policy, Geopolitics & Geoeconomics, Climate Change, Law & Governance, ESG & CSR

ORG: Vivekananda International Foundation (VIF)

TRA: SDG and Multilateralism

Activities carried out in Host Organization:

- Contributed to research & policy analysis on key national security themes
- Involved in developing research databases, drafting briefs, and compiling background material to support evidence-based strategic discussions
- Assisted in organising conferences, seminars, and expert talks (Vimarsh Talk on "Challenges of Viksit Bharat 2047")
- Prepared concept notes and agendas for roundtable discussions
- Authored a policy brief (to be published)

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Shivani Das

EB: B.A. in Social Sciences, 2021
TISS, Tuljapur;
PGD in Data Science in Health & Climate Change, 2023–24
IIIT Delhi

AI: Climate Policy, Urban Resilience, Disaster Risk Reduction

PWE: 4 Ys; Consultant, NDMA; HeatWatch; Senior Analyst, Mythos Labs; Comm. Fellow, Ideosync-UNESCO

ORG: National Disaster Management Authority (NDMA)

TRA: Heatwaves & Climate Vulnerability

Activities carried out in Host Organization:

- Worked on projects and policy-revisions towards gender mainstreaming, integrating social inclusion as well as coordinating multi-state and multi-ministry consultations to strengthen equitable Disaster Risk Reduction planning

---

Shreya Borah

EB: B.A. (H) in History, 2023
Miranda House,
University of Delhi

AI: Energy, Education, Gender, Climate Change

SI: Assam Energy Development Agency (AEDA), Govt. of Assam

PWE: Intern at IRADe; CPPG, Tezpur University; NITI Aayog, Govt. of India; Center for Policy Research and Governance (CPRG India)
Policy in Action Fellow, Young Leaders for Active Citizenship (YLAC)

ORG: Ministry of New and Renewable Energy (MNRE)

TRA: Clean Cooking Energy Adoption

Activities carried out in Host Organization:

- Involved in a mixed-methods research study examining the role of education and financial literacy in promoting the adoption of clean cooking energy in rural areas of Northeast India
- Involved in the day-to-day operations of the North Eastern Region (NER) Division, contributing to policy-related tasks and data analysis
- Developed strong skills in interpreting renewable energy and tariff reports, along with a deeper understanding of the region's clean energy landscape

---

Shruti Yadav

EB: B.A. LL.B (H), 2020
NLU, Visakhapatnam;
L.L.M. - ELECC, 2023
O. P. Jindal Global University;
Certificate Course in HRs & Dev., 2023
Harvard University;
PGD in Human Rights, 2025
NLU, Bangalore

AI: Climate Change Policies; Corporate (regulatory policies), Sustainable Development, Human Rights

PWE: 2 Ys 9 Ms; Kalra Law Associates, Lucknow

ORG: World Wide Fund for Nature (WWF) India
TRA: Disaster Risk Reduction, Climate Resilience, Mountain Ecosystems

Activities carried out in Host Organization:

- Worked across a diverse set of research and academic tasks within the Centre for Environmental Law (CEL)
- Contributed to PIB analysis segment of the Green Law Updates; helped identify, review, and summarise key policy developments relevant to the environmental sector
- Undertook legal research for the Kerala Judiciary Orientation Programme on Forest and Wildlife Laws; helped prepare case materials and thematic briefs for judicial training
- Assisted in updating the course manuals for the PGD Programme in ELECC; Conducted a research study on the contemporary framework of the Law of the Sea

---

Shubhangi Choudhary

EB: B.Tech. in BioMed. Engineering, 2022
MGMCET, Navi Mumbai

AI: Digitization, Energy, Climate Change, Water

PWE: Policy Intern, International Institute of SDG and Public Policy Research; Strategy Intern, Youth India Foundation; Biomedical Intern, Max Hospital

ORG: The Energy and Research Institute (TERI)

TRA: Electricity and Renewable Energy

Activities carried out in Host Organization:

- Entrusted with the role of making Machine Learning based model for electricity demand projections for Just Energy Transition
- Contributed to the division's work on nuclear energy

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Spriha Jaiswal

EB: B.A. (H) in History, 2020
Lady Shri Ram College for Women
University of Delhi

AI: Energy, Climate Change, ESG & CSR, Law & Governance

PWE: Consultant, Silver Bells Convent School, Bhopal (2020 - Present)

ORG: PwC India

TRA: Energy Transition

Activities carried out in Host Organization:

- Conducted literature review, stakeholder engagement, academic writing, and policy analysis to support the project
- Assisted in the preparation of research reports
- Contributed to the development of evidence-based recommendations

---

Stuti Tomar

EB: B.A. in Political Science, 2023
Lakshmibai College
University of Delhi

AI: ESG & CSR, Climate Change, Law & Governance

PWE: Intern at National Human Rights Commission (NHRC), New Delhi

ORG: Deloitte Shared Services India LLP

TRA: ESG

Activities carried out in Host Organization:

- Worked in the Audit & Assurance domain;
- Supported research, data analysis, and due diligence of CSR and sustainability reports
- Involved in checking compliance, verifying data accuracy
- Helped prepare draft reports under ESG and CSR frameworks

Suchetana Das Adhikari

EB: B.A. in Social Sciences, 2024
TATA Institute of Social Sciences
Guwahati

AI: ESG & CSR, Climate Change, Sustainable Urbanisation, Law & Governance

PWE: Intern at Kailash Satyarthi Children's Foundation; Muskurahat Foundation

ORG: Varahe Analytics

TRA: Water

Activities carried out in Host Organization:

- Worked in Survey Operations at Varahe Analytics, a political consultancy firm
- Involved in conducting election-related audits, preparing reports for focus group discussions (FGDs)
- Assisted in various research and analytical tasks to support data-driven political strategy

---

Suneha Majumder

EB: B.A. (H) in History, 2023
Lady Shri Ram College for Women
University of Delhi

AI: Waste Management, Climate Change, Social Impact, Industrial & Labour Policies

PWE: Intern at West Bengal State Archives, Valar Digital, and Postcards

ORG: Institute of Economic Growth (IEG), New Delhi

TRA: WASH facilities for Urban Slums

Activities carried out in Host Organization:

- Worked on a quantitative analysis using NFHS-5 datasets and DHS geospatial covariates
- Involved in forecasting of United Nations SDG indicators with regard to children and women health
- Conducted econometric analysis using Stata and worked on causal analyses and data compilation using Excel

---

Tarini Madan

EB: B.A. (H) in English Literature, 2024
Jesus and Mary College,
University of Delhi

AI: ESG & CSR, Climate Change, Sustainable Urbanization, Waste Management

ORG: NITI Aayog, Govt. of India
Aspirational Districts and Blocks Program and
State Support Mission (State Coordination Division)

TRA: Healthcare

Activities carried out in Host Organization:

- Supported policy research and inter-state coordination; Contributed to analysis and documentation
- Prepared briefs & data insights to aid senior officials in monitoring state development programs; Handled various tasks such as record keeping, comm. with various ministries

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Student Profile

Major Project-I Internship

Tanya

EB: B.Sc. (H) in Biochemistry, 2019
Institute of Home Economics
University of Delhi;
M.A. in Public Administration, 2021
IGNOU

AI: Energy, ESG & CSR, Climate Change, Public Health

SI: Municipal Corporation of Delhi: supported the planning & execution of key civic initiatives in alignment with the Swachh Bharat Mission in Rohini; Contributed to stakeholder coordination & grassroot engagements

ORG: Greenpeace South Asia

TRA: Extended Producer Responsibility (EPR)

Activities carried out in Host Organization:

- Assisted in the planning and execution of Greenpeace India's ongoing campaigns at local level
- Supported in content creation, research, and coordination with campaign leads
- Supported outreach events, workshops, communications and grassroots activities

---

Vasvi Ahluwallia

EB: B.A. (H) in Political Science, 2024
Jesus and Mary College
University of Delhi

AI: Sustainable Urbanization, Energy, ESG & CSR, Climate Change

PWE: Intern at the Governance and Research Vertical of NITI Aayog, Govt. of India

ORG: TERI SAS

TRA: Clean Cooking Fuel: Barriers & Enablers; Health Risks

Activities carried out in Host Organization:

- Synthesized evidence on the health risks associated with traditional unclean cooking fuels; Examined the contextual factors that influence their continued use, including key barriers to transitioning to clean alternatives
- Assessed the effectiveness of government policies (such as PMUY) in promoting clean cooking fuel adoption; Identified existing research gaps

---

Vibhuti Kapila

EB: B.A. (H) in History,
SGTB Khalsa College
Univeristy of Delhi;
PGD in Human Rights
NLU, Bangalore

AI: Climate & Urban Resilience, Urban Regeneration, Gender Studies

SI: Creaivity Adda, Shikshantar

PWE: 5 Ys; Global Shaper, Gurugram; Ideosync Media Combine; V.V.G.N.L.I.; Kanyaka Foundation; One Future Collective; NHRC, Delhi; CSH Delhi; CES; PSBT India; SAHRDC Delhi; Make A Difference

ORG: Aapti Institute

TRA: Climate Misinformation in Generative AI Platforms

Activities carried out in Host Organization:

- Focus on looking at climate misinformation patterns on Generative AI via surveys, expert interviews and desk research

---

Vidhi Singh

EB: B.A. in English & Pol. Science, 2022
Swami Shraddhanand College
University of Delhi

AI: Agriculture & Rural Development, Social Impact, Law & Governance, Public Health

SI: Senior Ambassador, Sustainability Ambassadors Global Exchange (SAGE) Program (2025 Cohort)

PWE: Research Associate, LAND (Learning Through Arts, Narrative and Discourse); Project Manager, One Year Lease; Exhibition Assistant, Khoj Studios

ORG: SELCO

TRA: Decentralized Renewable Energy

Activities carried out in Host Organization:

- Field Visits, primary research, secondary research, business modelling, policy analysis, proposal writing, competition analysis
- Identification of solar applications beyond households, policy convergence mapping, framework development for DRE-based livelihoods and documentation

---

EB: Educational Background; **AI:** Area of Interest; **SI:** Summer Internship; **PWE:** Prior Work Experience; **ORG:** Organization; **TRA:** Thematic Research Area

Major Project- I Host Organizations

EY

pwc

Deloitte.

GMDC
FUELING THE GROWTH

Grant Thornton

नीति आयोग
National Institution for Transforming India

teri school of advanced studies

teri | The Energy and Resources Institute
Creating Innovative Solutions for a Sustainable Future

ऑयल इंडिया
OIL INDIA

TATA TRUSTS

giz

POLSTRAT

IFPD
Indian Forum for Public Diplomacy

Connecting Dreams

aapti institute

UEDUCATE

Ministry of Environment, Forest and Climate Change

CII-ITC Centre of Excellence for Sustainable Development

teri school of advanced studies
Knowledge for Sustainable Development
Deemed-to-be University

EMERSON.

INTERNATIONAL SOLAR ALLIANCE

HARMONY PROGRESS DEVELOPMENT
PHDCCI
Estd. - 1905

SKOCH GROUP
GROWTH | LIVELIHOODS | EQUITY

NATIONAL DISASTER MANAGEMENT AUTHORITY
INDIA

Vivekananda International Foundation

Varahe ANALYTICS

WWF

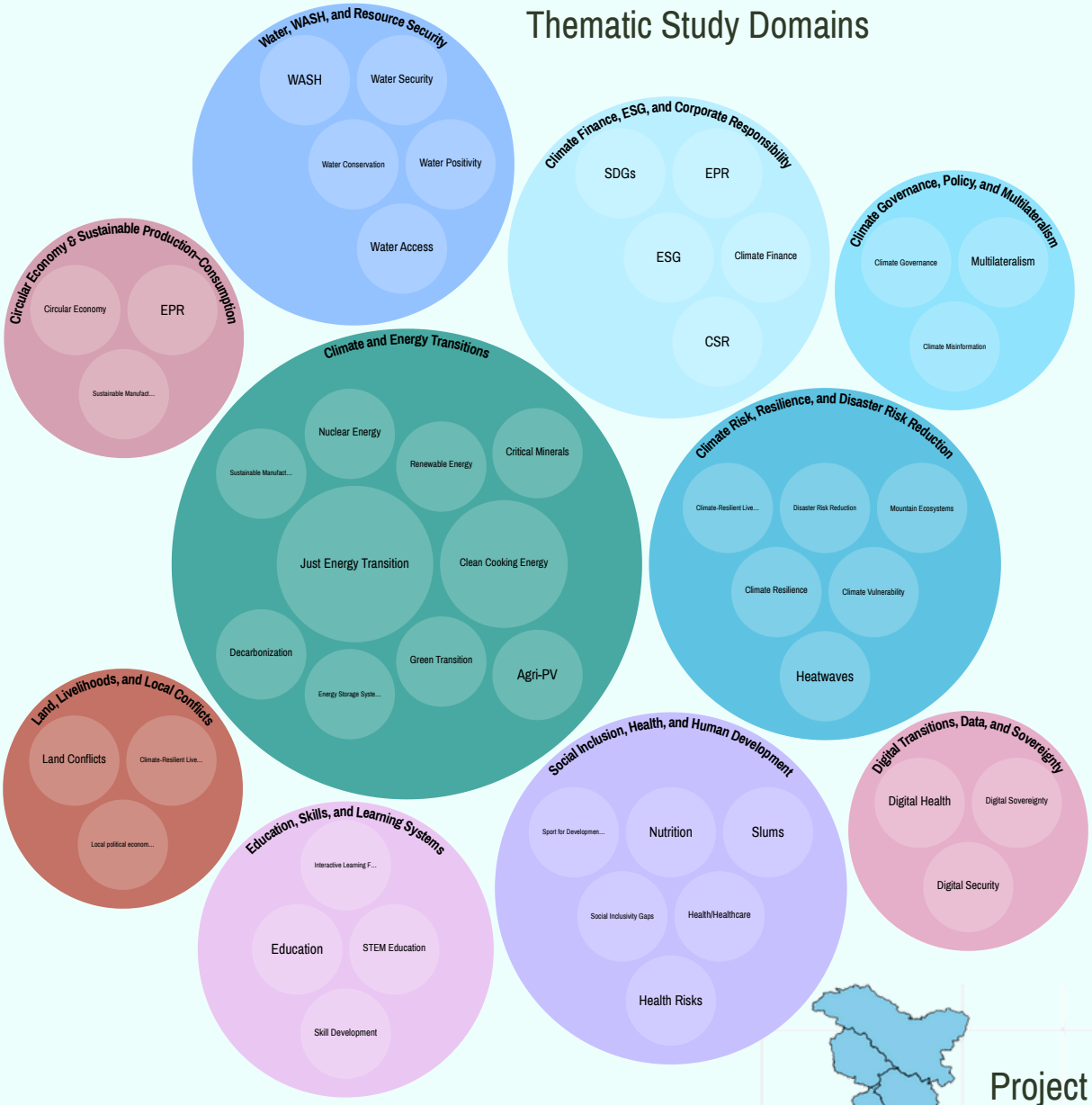
INSTITUTE OF ECONOMIC GROWTH

SELCO

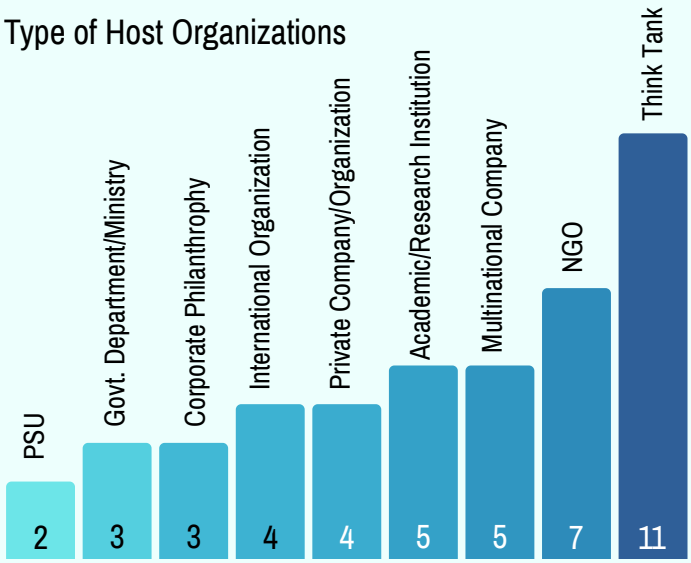
सत्यमेव जयते
नवीन एवं नवीकरणीय ऊर्जा मंत्रालय
MINISTRY OF NEW AND RENEWABLE ENERGY

Major Project - I Internship: At a glance

Thematic Study Domains



Type of Host Organizations



Project Locations

Major Project - I Internship: At a glance

Well-Groomed by Experts & Professionals

ACADEMIC FACULTY & RESEARCHERS

Dr. C. Kumar
Public Health | Social Policies | Research Methods

Dr. Gaurika Chugh
Public Policy | Electoral Processes, Institutions, Democracy

Dr. Gopal K. Sarangi
Energy & Sustainable Development | ESG

Prof. Shaleen Singhal
Sustainable Consumption Practices | Sustainable Urbanization

Prof. Arun Kansal
Water Management & Policy

Dr. Sapan Thapar
Energy Studies & Polices

Dr. Swarup Dutta
Rural Development

Dr. Ranjana R. Choudhuri
Water Governance & Policy

Dr. Pritha Dutta
Food Security | Agrarian Innovations

Dr. Anand Jaiswal
Life Cycle Analysis

SUPERANNUATED VETERAN ADMINISTRATORS AND POLICY MAKERS IN GOVT. OF INDIA

Mr. Shri Prakash
Public Administration | Infrastructure Development

Amb. Ajay Malhotra
Geopolitics | International Relations

Mr. R. R. Rashmi
Climate Change Issues

Ms. Jaya Varma Sinha
Digital Economy

Mr. Ajay Shankar
Power Sector | Industry & Urban Development

Dr. Anuradha Mitra
Industrial Development & Policy

Mr. Amitava Bhattacharya
Public Administration

INTERNATIONAL COLLABORATORS [ACADEMIC FACULTY & RESEARCHERS] FROM UNIVERSITY OF LEEDS

Dr. Papiya Mazumdar
Global Health | Climate Change

Dr. Charles Dannreuther
European Political Economy

Dr. Peter Doak
Sociology | Conflict Sites

Dr. Geoff Goodwin
Global Political Economy | Water Governance

Dr. Jörg Wiegratz
Platform Capitalism | Fintech

VISITING FACULTY [RESEARCHER, PRACTITIONER, ACADEMICIAN]

Dr. Santosh Das
Economy & Policy Issues

Dr. Anjali Tandon
Industrial Development & Policy

Dr. Nitya Nanda
Globalization | International Trade

Dr. Pradeep K. Choudhury
Education Inequality, Access & Policy

Dr. Sangeeta Ghosh
Work & Employement

Inviting Organizations For
Major Project Internships & Final Placements

	Hiring Period	Time-line
Major Project -II Internship	October 2025 - January 2026	January 2026 - May 2026
Final Placement	October 2025 - June 2026	July 2026 Onwards

MA-PPSD Programme Coordinator

Dr. Chandan Kumar

+91-91291 85999

chandan.kumar@terisas.ac.in

Public Relations Officer

Ms. Sonika Goyal

+91-99714 89727

sonika.goyal@terisas.ac.in

MA-PPSD PLACEMENT COMMITTEE

Dr. Gaurika Chugh
Placement Coordinator
gaurika.chugh@terisas.ac.in

Student Placement Coordinators

Adrij Thakur
adrij.thakur@terisas.ac.in

Gunpreesh Kaur
gunpreesh.kaur@terisas.ac.in

Krish Agarwalla
krish.agarwalla@terisas.ac.in

Placement Cell Members

Aqsareha Mujawar
aqsareha.mujawar@terisas.ac.in

Shivani Das
shivani.das@terisas.ac.in

Vibhuti Kapila
vibhuti.kapila@terisas.ac.in

Contact Us

placement.ppsd@terisas.ac.in

TERI School of Advanced Studies,
Vasant Kunj, New Delhi

Linkedin.com/MA-PPSD

Course title: Public Policy: ***A Concise Exposure***			
Course code: PPS 112	**No. of credits:** 3	**L-T-P:** 43-02-00	**Learning hours:** 45
Pre-requisite course code and title (if any): None			
Department: Department of Policy & Management Studies			
Course coordinator(s): Mr. Shri Prakash		**Course instructor(s):** Mr. Shri Prakash, Dr. Chandan Kumar	
Contact details: shri.prakash@terisas.ac.in			
Course type: Core		**Course offered in:** 1st Semester	

Course description

Public policy affects almost every aspect of one's daily life, but it cannot be understood without reference to policy-making processes, which refer to a series of decisions made by public actors. Learning more about public policy and the making of it covers the whole process of public decision-making. It also includes the feedback policymakers receive on their decisions. This course is designed to provide the students a brief, yet comprehensive, overview of the Public Policy processes including formulation, implementation, monitoring and evaluation, and key actors/institutions. The course comprises four modules: the first module sets the context for policymaking, which begins with discussing fundamental concepts related to public policy discipline; the second module focuses on approaches/models and determinants of policy formulation; the third includes the approaches/models and instruments of policy implementation, and a brief overview of the policy monitoring and evaluation issues; and the fourth module provides a background of public policy formulation and implementation in India along with a few case studies.

Learning objectives:

- To introduce students to key concepts, elements, approaches/models, processes, scope, and dimensions specific to the public policy discipline.
- To discuss the role of key institutions and actors in public policy processes.
- To provide students with an overview of the public policy formulation and implementation in the Indian context.

Course content

Module	Topic	L	T	P
1.	**Policy Perspectives, Institutions & Actors** • Linkages between Polity, Politics, and Policy • Governance: A synoptic perspective on Policymaking • Public Policy: Significance, Elements, Scope, Typologies, Dimensions, Styles, and Advocacy • Policy Institutions: National (e.g., Constitutions & Constitutional Courts, Division of Powers, Electoral Institutions & Party Systems); and Intergovernmental Organizations (e.g., The United Nations System, The World Trade Organization) • Key Policy Actors: Public Actors (Executive, Legislature, Judiciary, Bureaucracy); Political Parties; Private Actors (Interest Groups, Experts) • The Policy Cycle	12	0	0
2.	**Policy Formulation** • Approaches/Models of Policy Formulation: Rational Model; Incremental Model; Group Theory Model; Elite Theory Model; Institutional Model; Game Theory Model, Systems Model. • Determinants of Policy Formulation: Expertise, Information, and Ideas; International Organizations; Interest Groups; Political Preferences; Pursuit of Private Interests (Bureau-shaping)	8	0	0

3.	**Policy Implementation, Monitoring & Evaluation** • Policy Implementation Approaches/Models: Top-Down Model; Bottom-Up Model; Policy-Action Relationship Model; Inter-Organizational Interaction Approach; A Synthesis of Bottom-Up and Top-Down Approaches • Policy Implementation Instruments: Organizational, Authoritative, Financial, and Information-based Implementation Tools • Barriers and Conditions for Successful Policy Implementation • Policy Monitoring: Approaches, Techniques, and Challenges • Policy Evaluation: Criteria, Types, Approaches, and Methods	15	0	0
4.	**Public Policy in India** • Public Policy in India: Historical Perspective and Contemporary Issues • Civil Society Organization's interface with Government in India and their role in policy formulation • Policy implementation in India • Key Indian Policy case studies: for example, The Environment (Protection) Act, 1986; The Right of Children to Free and Compulsory Education Act, 2009; The Muslim Women (Protection of Rights on Marriage) Act, 2019; The Medical Termination of Pregnancy (MTP) Act, 1971 and MTP (Amendment) Act, 2021.	8	2	0
	Total	**43**	**2**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (20%)
- **Minor Test-2:** Guided Reading and Presentation of Policy Case Studies (30%)
- **Major Test:** Written Test/Term Paper Submission and Presentation (50%)

Learning outcomes

Upon completion of this course, candidates would be able to:

1. understand the fundamental concepts, elements, approaches, considerations, scope, and dimensions of public policy and its processes (All evaluations)
2. critically reflect on the role and functions of key actors and public policy institutions (All evaluations)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Policy Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies. The learning expectation is to enhance critical and informed understanding.

Suggested Readings

Module 1:

- Birkland, T. A. (2015). *An Introduction to the Policy Process: Theories, Concepts, and Models of Public Policy Making, Third Edition*. London & New York: Routledge (Taylor & Francis Group).
- Howlett, M., & Tosun, J. (Eds.) (2017). *Policy Styles and Policy-Making: Exploring the Linkages*. London & New York: Routledge (Taylor & Francis Group).
- Kingdon, J. W. (2014). *Agendas, Alternatives, and Public Policies, Second Edition*. England: Pearson Education Limited.
- Knill, C., & Tosun, J. (2020). *Public Policy: A New Introduction, Second Edition*. London: Red Globe Press (Macmillan Education Ltd.).
- O'Connell, S. (ND). Policy Development and Policy Advocacy. A Manual prepared by the National Democratic Institute, Arab Center for Development. Available at: https://www.ndi.org/sites/default/files/Policy%20Development%20and%20Advocacy%20Workbook_EN.pdf.
- Rinfret, S. R., Scheberle, D., & Pautz, M. C. (2019). *Public Policy: A Concise Introduction*. California: CQ Press.
- Zahariadis, N. (Ed.) (2016). *Handbook of Public Policy Agenda Setting*. Cheltenham, UK: Edward Elgar Publishing Ltd.

Module 2:

- Cairney, P. (ed.) (2012). *Understanding Public Policy: Theories and Issues*. UK: Palgrave Macmillan.
- Christopher, W.M., & Sabatier, P.A. (Eds.) (2018). *Theories of the Policy Process, Fourth Edition*. New York: Routledge.
- Dye, T.R. (2017). *Understanding Public Policy, Fifteenth Edition*. Boston, USA: Pearson Education, Inc.
- Gerston, L. N. (2015). *Public Policy Making: Process and Principles, Third Edition*. London & New York: Routledge (Taylor & Francis Group).
- Howlett, M., & Mukherjee, I. (2017). *Handbook of Policy Formulation*. Cheltenham, UK: Edward Elgar Publishing Ltd.
- Howlett, M., Ramesh, M., & Perl, A. (2020). *Studying Public Policy: Principles and Processes, Fourth Edition*. Ontario: Oxford University Press.
- Potůček, M. et al. (2017). *Public Policy: A Comprehensive Introduction*. Prague, Czech Republic: Karolinum Press.

Module 3:

- Bochel, C., & Hugh Bochel, H. (2018). *Making and Implementing Public Policy: Key Concepts and Issues*. London: Palgrave.
- Gardner, A. L., & Brindis, C. D. (2017). *Advocacy and Policy Change Evaluation: Theory and Practice*. California: Stanford University Press.
- Howlett, M. (2019). *Designing Public Policies: Principles and Instruments, Second edition*. London & New York: Routledge (Taylor & Francis Group).
- Linquiti, P. D. (2022). *Rebooting Policy Analysis*: *Strengthening the Foundation, Expanding the Scope.* California: CQ Press.
- Shah, A. (Ed.) (2020). Policy, *Program and Project Evaluation: A Toolkit for Economic Analysis in a Changing World*. Cham, Switzerland: company Springer Nature Switzerland AG.

Module 4:

- Bhattacharya, R. (Ed.) (2015). *Regional Development and Public Policy Challenges in India*. New Delhi: Springer.
- Chakrabarti, R., & Sanyal, K. (2017). *Public Policy in India*. New Delhi: Oxford University Press.
- Chopra, K. (2017). *Development and Environmental Policy in India: The Last Few Decades*. Singapore: Springer Nature Singapore Pte Ltd.
- Mitra, S.K. (2017). *Politics in India: Structure, Process and Policy, Second Edition*. New York: Routledge.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course prepared by: Dr. Chandan Kumar

Course reviewers

1. Prof. Vishal Narain, Professor, Public Policy and Governance, Management Development Institute, Gurugram.
2. Prof. Arvind K. Mishra, Professor, Zakir Husain Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi, India

Course title: Social Policies & Sustainable Development			
Course code: PPS 114	**No. of credits:** 3	**L-T-P:** 41-04-00	**Learning hours:** 45
Pre-requisite course code and title (if any): None			
Department: Department of Policy & Management Studies			
Course coordinator(s): Dr. Chandan Kumar	**Course instructor(s):** Dr. Chandan Kumar, Dr. Pritha Datta, & Others		
Contact details: chandan.kumar@terisas.ac.in			
Course type: Core	**Course offered in:** 1st Semester		

Course description

Strong social policy is essential for sustainable growth. Social policies have been expanded across the Global South during the last few decades, and social protection is increasingly highlighted as a fundamental component of the global sustainable development agenda. Having an overview of social policy issues is extremely useful for students of public policy and anyone who wants to understand the true roots of successful sustainable development. This course comprises five modules discussing social policy in the sustainable development context with an emphasis on four select social policy domains and well-being with special reference to India. It begins by introducing the fundamentals of sustainable development and how social policies can be instrumental in achieving its objectives. Further, the course discusses four key social policy domains; first, the food and nutrition security issues and related agrarian policy initiatives and innovations; second, the population health and well-being issues and associated schemes/programmes; third includes the education and skill development policy initiatives; and fourth focuses on work and employment issues and initiatives. The aim is to orient students to the importance of social policies in promoting sustainable development, along with the processes and challenges in developing and implementing such policies, with special reference to India.

Learning objectives:

- To provide students with a basic understanding of sustainable development and social policies, their instruments, and how well-implemented social policies help achieve the objectives of sustainable development.
- To discuss the aspects of food and nutrition security, sustainable food systems, and government initiatives taken to end hunger through food and agricultural policies in the Indian context.
- To orient students to understand and assess the public health issues and challenges, and discuss major government schemes/programmes in India to improve population health and wellbeing.
- To provide an overview of the processes and challenges related to India's education policy and recent scenarios of population skilling initiatives.
- To discuss the livelihood and workforce participation scenarios including employment and unemployment patterns of the Indian population along with contemporary government initiatives to promote and generate employment.

Course content

Module	Topic	L	T	P
1.	**Introduction to Sustainable Development & Social Policy** • Sustainable Development: Concept, Evolution, Framework, and Challenges • Social Policy in a Sustainable Development Context: emphasizing Gender Issues, Regional Disparities, Social Marginalization, Disability, Inclusivity. • Social Policy Instruments: Food Subsidies, Guarantee of Work, Social Assistance, Conditional Cash Transfers, Social (Health) Insurance for the Poor, Social Security, Direct Benefit Transfer	5	0	0
2.	**Food Security and Agrarian Innovations** • Drivers of Food System affecting the Access to Safe and Nutritious Food for All • The ecosystem of India's food security regime: Evolution of National Food Security Act (NFSA) • An Overview of Food-based Safety Net Programmes in India • Sustainable Food Systems: Priorities to End Hunger and Protect the Planet	10	0	0

	• Innovations in Production Technologies in India: Green Revolution, White Revolution, Blue Revolution, Red Revolution, Golden Revolution • Innovations in Incentive Policies in Indian Agriculture: *Pradhan Mantri Annadata Aay Sanrakshan Abhiyan* (PM AASHA), Direct income (investment) support-based schemes, Reforms in marketing policies, arrangements, and infrastructure			
3.	**Health and Wellbeing** • Approaches to understanding Population Health and Disease • Recent trends and patterns of key public health challenges in India (including progress towards SDG 3 targets) • Importance of social determinants of health in India's context and its policy relevance • Major Contemporary Health Schemes and Programmes as case studies (subject to change as per the Government's focus/priority): for example – National Health Mission, Integrated Child Development Services (ICDS) Scheme, *Janani Suraksha Yojana* and its modified/allied schemes or programmes, *Ayushman Bharat* Scheme, POSHAN *Abhiyaan*, etc. • One Health Approach	10	1	0
4.	**Education and Skill Development** • History of Education Policymaking in India since Independence • Salient Features of National Education Policy 2020: • Contemporary Education System in India: Issues & Challenges • Inequality in Access to Education in India: social group, gender, economic, locational, and age disadvantage (including progress towards SDG 4 targets) • Education, Skill, and Employability Gaps in India • Skill Development in India: Challenges; Solutions; and Government Schemes including *Pradhan Mantri Kaushal Vikas Yojana (PMKVY)*, Skills Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP), UDAAN, Standard Training Assessment and Reward Scheme (STAR), Polytechnic Schemes, Vocationalisation of Education	10	2	0
5.	**Work and Employment** • Workforce across economic sectors in India including progress in female workforce participation. • Contemporary Employment and Unemployment scenario in India • Special cases: child labour, migrant workers (particularly women migrants), precarious employment, forced labour, gig workers. • Employment Guarantee Schemes and other Government Initiatives for Employment Generation	6	1	0
	Total	**41**	**4**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (20%)
- **Minor Test-2:** Guided Reading and Presentation of Select Social Policy Context (30%)
- **Major Test:** Written Test (50%)

Learning outcomes

Upon completion of this course, candidates would be:

1. able to understand the fundamental concepts, considerations, and challenges related to the development and implementation of social policy in a country and its linkages with sustainable development (All evaluations)
2. able to independently identify, conceptualize, articulate, and systematically document any social policy issues in the form of a brief report (Minor Test-2)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Social Policy Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

Module 1:

- Alcock, C., Daly, G., & Griggs, E. (2008). *Introducing Social Policy, Second Edition*. England: Pearson Education Limited.
- Alcock, P., May, M., & Wright, S. (Eds.) (2012). *The Student's Companion to Social Policy, Fourth Edition*. West Sussex, UK: John Wiley & Sons Ltd.
- Blakemore, K., & Griggs, E. (2007). *Social Policy: An Introduction, Third Edition*. Berkshire, England: Open University Press.
- Elliott, J.A. (2013). *An Introduction to Sustainable Development, Fourth Edition*. London & New York: Routledge (Taylor & Francis Group).
- Hall, A., & Midgley, J. (2004). *Social Policy for Development*. London: Sage Publications Ltd.
- Mkandawire, T. (Ed.) (2004). *Social Policy in a Development Context*. UK: Palgrave Macmillan.
- Sachs, J.D. (2015). *The age of sustainable development*. New York: Columbia University Press.
- Spicker, P. (2014). *Social Policy: Theory and Practice, Third Edition*. Bristol, UK: Policy Press.
- Redclift, M., & Springett, D. (2015). *Routledge International Handbook of Sustainable Development*. New York: Routledge.
- Wapling, L., Schjoedt, R., & Sibun, D. (2021). *Social Protection and Disability in India*. Working Paper. London: Development Pathways Ltd. Available at: https://www.developmentpathways.co.uk/wp-content/uploads/2021/02/India-disability-Feb-2021-1.pdf.

Module 2:

- Behnassi, M., Pollmann, O., & Gupta, H. (Eds.) (2019). *Climate Change, Food Security and Natural Resource Management: Regional Case Studies from Three Continents*. Cham, Switzerland: Springer Nature.
- Erokhin, V., & Gao, T. (2020). *Handbook of Research on Globalized Agricultural Trade and New Challenges for Food Security*. Hershey PA, USA: IGI Global.
- Goswami, B., Bezbaruah, M. P., & Mandal, R. (Eds.) (2018). *Indian Agriculture after the Green Revolution: Changes and Challenges*. London & New York: Routledge (Taylor & Francis Group).
- Gulati, A., Roy, R., & Saini, S. (Eds.) (2021). *Revitalizing Indian Agriculture and Boosting Farmer Incomes*. Singapore: Springer Nature Singapore Pte Ltd.
- Gulati, A., Zhou, Y., Huang, J., Tal, A., & Juneja, R. (2021). *From Food Scarcity to Surplus: Innovations in Indian, Chinese and Israeli Agriculture*. Singapore: Springer Nature Singapore Pte Ltd.
- Narayanan, S. (2015). Food Security in India: The Imperative and Its Challenges. *Asia & the Pacific Policy Studies*, 2(1), 197–209.
- Naylor, R.L. (Ed.) (2014). *The Evolving Sphere of Food Security*. New York: Oxford University Press.
- Pingali, P., Aiyar, A., Abraham, M., & Rahman, A. (2019). *Transforming Food Systems for a Rising India*. UK: Palgrave Macmillan.
- Saad, M. B. (2013). *The Global Hunger Crisis: Tackling Food Insecurity in Developing Countries*. London: Pluto Press.
- Sarkar, A., Sensarma, S.R., & vanLoon, G.W. (Eds.) (2019). *Sustainable Solutions for Food Security: Combating Climate Change by Adaptation*. Cham, Switzerland: Springer Nature.
- Upadhyaya, A.S., Kolås,Å., & Beri, R. (Eds.) (2022). *Food Governance in India: Rights, Security and Challenges in the Global Sphere*. London & New York: Routledge (Taylor & Francis Group).
- von Braun, J., Afsana, K., Fresco, L.O., & Hassan, M.H.A. (Eds.) (2023). *Science and Innovations for Food Systems Transformation*. Cham, Switzerland: Springer Nature. https://link.springer.com/book/10.1007/978-3-031-15703-5.
- Webb, J. (Ed.) (2017). *Food Security: Treat Factors, Policies and Challenges*. New York: Nova Science Publishers, Inc.

Module 3:

- Bharat, S., & Sethi, G. (Eds.) (2019). *Health and Wellbeing of India's Young People: Challenges and Prospects*. Singapore: Springer Nature Singapore Pte Ltd.
- Boccia, S., Villari, P., & Ricciardi, W. (2015). *A Systematic Review of Key Issues in Public Health*. Switzerland: Springer International Publishing.

- Brown GW, Yamey G, Wamala S (Eds.) (2014). *The Handbook of Global Health Policy*. West Sussex: John Wiley & Sons, Ltd.
- Clavier, C., & de Leeuw, E. (2013). *Health Promotion and the Policy Process*. New York: Oxford University Press, Inc.
- Mackenzie, J. S., Jeggo, M., Daszak, P., & Richt, J. A. (Eds.) (2013). *One Health: The Human–Animal–Environment Interfaces in Emerging Infectious Diseases. Food Safety and Security, and International and National Plans for Implementation of One Health Activities*. Heidelberg: Springer-Verlag.
- Mohanty, S. K., Mishra, U. S., & Chauhan, R. K. (Eds.) (2019). *The Demographic and Development Divide in India: A District-Level Analyses*. Singapore: Springer Nature Singapore Pte Ltd.
- Phelan, J. C., Link, B. G., & Tehranifar, P. (2010). Social conditions as fundamental causes of health inequalities: theory, evidence, and policy implications. *Journal of health and social behavior*, 51 Suppl, S28–S40.
- Prata, J. C., Ribeiro, A. I., & Rocha-Santos, T. (Eds.) (2022). *One Health: Integrated Approach to 21st Century Challenges to Health.* London: Elsevier Inc.
- Rüegg, S. R., Häsler, B., & Zinsstag, J. (Eds.) (2018). Integrated approaches to health: A handbook for the evaluation of One Health. The Netherlands: Wageningen Academic Publishers.
- Spasoff RA (1999). *Epidemiologic Methods for Health Policy*. New York: Oxford University Press.
- WHO (2010). *A Conceptual Framework for Action on the Social Determinant of Health*. Social Determinants of Health Discussion Paper 2. Debates, Policy & Practice, Case Studies. Geneva: World Health Organization (WHO).

Module 4:

- Ayyar, R.V.V. (2017). *History of Education Policymaking in India, 1947–2016*. New Delhi: Oxford University Press.
- Borooah, V. K. (2017). *The Progress of Education in India: A Quantitative Analysis of Challenges and Opportunities*. Cham, Switzerland: Springer Nature.
- GoI (2021). National Education Policy 2020. Ministry of Human Resource Development, Govt. of India. Available at: https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf.
- Jain, M., Mehendale, A., Mukhopadhyay, R., Sarangapani, P.M., & Winch, C. (Eds.) (2018). *School Education in India: Market, State and Quality*. London & New York: Routledge (Taylor & Francis Group).
- Kaul, V., & Bhattacharjea, S. (Eds.) (2019). *Early Childhood Education and School Readiness in India: Quality and Diversity*. Singapore: Springer Nature Singapore Pte Ltd.
- Kumar, C., Singh, S.P., & Nauriyal, D.K. (2016). *Dynamics of Occupational and Educational Mobility in India*. New Delhi: Authors Press.
- Kumar, K. (Eds.) (2018). *Routledge Handbook of Education in India: Debates, Practices, and Policies*. London & New York: Routledge (Taylor & Francis Group).
- Mishra, M., & Pettala, R. (Eds.) (2023). *Education of Socio-Economic Disadvantaged Groups: From Marginalisation to Inclusion*. London & New York: Routledge (Taylor & Francis Group).
- Nambissan, G.B., & Rao, S. (Eds.) (2013). Sociology of Education in India: Changing Contours and Emerging Concerns. New Delhi: Oxford University Press
- Raina, J. (Ed.) (2020). Elementary Education in India: Policy Shifts, Issues and Challenges. London & New York: Routledge (Taylor & Francis Group).
- Sarangapani, P. M., & Pappu, R. (Eds.) (2021). *Handbook of Education Systems in South Asia*. Singapore: Springer Nature Singapore Pte Ltd.
- Varghese, N.V., & Sabharwal, N.S. (Eds.) (2024). *India Higher Education Report 2022: Women in Higher Education*. London & New York: Routledge (Taylor & Francis Group).

Module 5:

- Balasubramanian, I. (2016). Local skill concentrations and district employment growth: a simultaneous equation approach for India. *Annals of Regional Science*, 56(2), 491-511.
- Bhide, S., Balasubramanyam, V.N., & Krishna, K.L. (Eds.) (2021). *Deciphering India's Services*
- Bisht, N., & Pattanaik, F. (2023). Youth Employment across Industrial Categories in India during the Neoliberal Paradigm. *Youth Voice Journal*, 12, 3-29.

- Borooah, V.K. (2019). *Disparity and Discrimination in Labour Market Outcomes in India: A Quantitative Analysis of Inequalities*. London: Palgrave Macmillan.
- Chand, R., & Singh, J. (2022). Workforce Changes and Employment: Some Findings from PLFS Data Series. NITI Aayog Discussion Paper. https://www.niti.gov.in/sites/default/files/2023-02/Discussion_Paper_on_Workforce_05042022.pdf
- Das, K., & Mahanta A. (2023). Rural non-farm employment diversification in India: the role of gender, education, caste and land ownership. *International Journal of Social Economics*, 50(6), 741-765.
- Jatav, M., & Nair J. (2023). Determinants of Participation in India's Mahatma Gandhi National Rural Employment Guarantee Scheme in Three Southern States. *Journal of Asian and African Studies*, 58(7), 1055-1075.
- Khan, G.A. (2021). A critical analysis of vulnerability in informal sector employment in India: Protective mechanisms and adequacy of protection. *International Social Science Journal*, 71 (241-242), 197-215.
- Klonner, S., & Oldiges, C. (2022). The welfare effects of India's rural employment guarantee. *Journal of Development Economics*, 157, 102848.
- Patwardhan, S., & Tasciotti, L. (2023). The effect of the Mahatma Gandhi National Rural Employment Guarantee Act on the size of outstanding debts in rural India. *Journal of Development Effectiveness*, 15(4), 353-372.
- Posso, A. (Ed.) (2020). *Child Labor in the Developing World: Theory, Practice and Policy*. Singapore: Springer Nature Singapore Pte Ltd.
- Raj, R. S. N., & Singha, K. (Eds.) (2022). *The Routledge Handbook of Post-Reform Indian Economy*. London & New York: Routledge (Taylor & Francis Group).
- Ramaswamy, K.V. (2015). *Labour, Employment and Economic Growth in India*. New Delhi: Cambridge University Press.
- Roychowdhury, A. (2023). Economic viability and underemployment in India's unorganized manufacturing firms: evidence from nationally representative surveys. *Journal of the Asia Pacific Economy*, 28(2), 786-811.
- Sarkar, S., Sahoo, S., & Klasen, S. (2019). Employment transitions of women in India: A panel analysis. *World Development*, 115, 291-309.
- *Sector Growth*. London & New York: Routledge (Taylor & Francis Group).
- Tiwari, R., & Tiwari, S. (2016). Women employment in unorganised sector in India: An empirical analysis. *Journal of Rural Development*, 35(4), 645-664.
- Upadhya, C., & RoyChowdhury, S. (2024). Crafting new service workers: skill training, migration and employment in Bengaluru, India. *Third World Quarterly*, 45(4), 753-770.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Dr. Chandan Kumar

Course reviewers

1. Prof. Arvind K. Mishra, Professor, Zakir Husain Centre for Educational Studies, School of Social Sciences, Jawaharlal Nehru University, New Delhi, India
2. Prof. M. Mahapatro, Professor & Head, Department of Social Sciences, The National Institute of Health and Family Welfare, New Delhi, India.

Additional Information

This Course outline was approved in the 59th Academic Council Meeting held on 4th June 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Research Methods for Public Policy			
Course code: PPS 115	**No. of credits:** 3	**L-T-P:** 39-04-04	**Learning hours:** 45
Pre-requisite course code and title (if any): None			
Department: Department of Policy & Management Studies			
Course coordinator(s): Dr. Chandan Kumar		**Course instructor(s):** Dr. Chandan Kumar	
Contact details: chandan.kumar@terisas.ac.in			
Course type: Core		**Course offered in:** Semester 1	

Course description

This course is designed to orient students to essential research methods helpful for understanding and conceptualizing policy research and tools for administrative decision-making. Policy research often employs the methods of social science disciplines. The course aims to create a firm base on basic quantitative and qualitative research methods and tools, their appropriate application in policy research and to help students build perspectives based on robust evidence. This course comprises five modules: the first module discusses the basic features of research, with special reference to policy research; the second module provides crosscutting methods; the third and fourth modules provide an overview of qualitative and quantitative analytical methods, respectively; and the fifth module focuses on organizing and documenting analytic evidence.

Learning objectives:

- To orient students to basic and unique features of research in public policy.
- To enable students to design and carry out an independent study using quantitative or qualitative or mixed-method approaches.
- To help students develop the ability to select appropriate methods and tools for quantitative and qualitative data analyses and to draw inferences.
- To support students in developing or strengthening their skills in organizing, synthesizing, and documenting analytical evidence in the form of research/technical reports.

Course content

Module	Topic	L	T	P
1.	**Basic Features of Research in Public Policy** • Unique Features of Research in Public Policy • Basis Steps of Policy Analysis and Research for Evidence-based Policymaking • Research Ethics	6	0	0
2.	**Research Design, Data, and Measurement Approaches & Tools** • Study Design for Policy Research: Cross-Sectional Study, Time-Series Study, Longitudinal design, Systematic Review, Meta-Analysis, Experimental Research Study, Case Study • Identifying and Gathering Secondary Data: Public or Private Sources of Data, Bibliographic Databases, Literature Review, Legal Searches, Management Records • Primary Data Collection Approaches/Methods for Policy Information: The Investigative Approach, Survey Method, In-depth Interview, Focus-Group Discussion, Observation • Definition and Measurements of Theoretical Concepts & Constructs; Types of Data; Scales of Measurements; Reliability and Validity • Population, Sampling, and Subjects: concept of population and sample, various approaches to the sampling, central limit theorem, issues in sample size selection, and basic sampling designs • Preparation of Survey Instrument: Considerations for Quality Questionnaire Design	12	0	0

3.	**Qualitative Research Approach and Analysis** • Qualitative Research Approaches: Grounded Theory; Ethnography; Discourse Analysis and Critical Discourse Analysis; Phenomenology. • Analysis and Interpretation of Qualitative Data: Transcribing and listening; Organizing the Data; Coding and Categorizing; Interpreting the Data; Evaluating the Interpretation; Being Reflexive about the Interpretation; Some Specific Analytical Issues. • Use of Software for Qualitative data analysis: e.g., ATLAS.ti, NVivo, etc.	7	2	2
4.	**Quantitative Data Analysis** • Univariate Analysis: Frequencies, Measures of Central tendency, Measures of Dispersion • Combining Indicators and Constructing Indices • Examining the Relationship between and among Variables with Tests of Statistical Significance: Introduction to Hypothesis Testing; Type of Statistical Errors; Level of Significance; Confidence Interval; Statistical vs. Practical Significance; some commonly used Statistical Tests • Correlation and Regression Analysis • Use of Statistical Software for Data Analysis: e.g., SPSS, Stata, R, etc. (along with Microsoft Excel).	12	2	2
5.	**Communicating/Documenting the Analysis** • Organization of the Report • Presentation of quantitative data into meaningful tables • Using Graphics to communicate • Interpretation and Discussion of results • Acknowledging the limitations of the study	2	0	0
	Total	**39**	**4**	**4**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (20%)
- **Minor Test-2:** Presentation & Submission of Excel-based Exercises on Quantitative Data (30%)
- **Major Test:** Presentation and submission of a Research study proposal (50%); the students are required to select any policy research question, and develop a research proposal, which will be submitted and presented as a part of the major/final test. The structure of the research proposal for a policy research study includes:
    - Introduction
    - Research Questions
    - Objectives
    - Methodology: Research hypothesis; Study design; Study setting; Reference and study population; Sample size; Sampling method; Exclusion criteria (if any); Specify the measures/variables; Study tools/instruments; Technique/Process of using the instruments and making the measurements; Pilot study, Data analysis plan
    - Expected Outcomes
    - Study Timeline

  Indicators for evaluation: (a) Identification of research problem; (b) Framing research questions, objectives, and hypothesis (if any); (c) Description of components under methodology section; (d) Conceptualizing expected outcomes and timeline; (d) Content, language, clarity; (e) Reference style and number of references cited

Learning outcomes

1. Upon completion of the course, candidates would be able to systematically identify the policy research questions and conceptualize them to carry out a scientific investigation (All evaluations)
2. Knowledge of quantitative and qualitative research methods and their usage will help participants appropriately apply such methods in their research inquiries that they'll carry out in the following semesters as well as in the future (All evaluations)
3. Participants would get the ability to develop a research proposal based on objective(s) which require(s) investigation using quantitative, qualitative, or mixed method approach (Major Test)

Pedagogical approach

Classroom lectures, excel-based data analysis, and invited talks from guest speakers, especially those working in the development sector who could provide exposure to different sorts of quantitative or qualitative analysis carried out by them on real-world data.

Suggested Readings

Module 1:

- Ewing, R., & Park, K. (Eds.) (2020). *Basic Quantitative Research Methods for Urban Planners*. New York & London: Routledge.
- Gelman, A., & Cortina, J. (Eds.) (2009). *A Quantitative Tour of the Social Sciences*. Cambridge, UK: Cambridge University Press.
- Gravetter, F. J., & Wallnau, L. B. (2014). *Essentials of Statistics for the Behavioral Sciences, 8th Edition*. Belmont:Thomson Wadsworth.
- Howlett, M. (Ed.) (2023). *The Routledge Handbook of Policy Tools*. London & New York: Routledge.
- Patton, C. V., Sawicki, D. S., & Clark, J. J. (2016). *Basic Methods of Policy Analysis and Planning, 3rd Edition*. London & New York: Routledge.
- Weimer, D. L., & Vining, A. R. (2017). *Policy Analysis: Concepts and Practice, 6th Edition*. New York & London: Routledge.

Module 2:

- Creswell, J. W., & Creswell, J. D. (2018). *Research Design. Qualitative, Quantitative, and Mixed Methods Approaches, 5th Edition*. California: SAGE Publication, Inc.
- Rassel, G., Leland, S., Mohr, Z., & O'Sullivan, E. (2021). *Research Methods for Public Administrators, 7th Edition*. New York & London: Routledge.
- Rosenbaum, P. R. (2017). *Observation and experiment: an introduction to causal inference*. Massachusetts: Harvard University Press.
- Roy, T. K., Acharya, R., & Roy, A. K. (2016). *Statistical Survey Design and Evaluating Impact*. Delhi: Cambridge University Press.
- van Thiel, S. (2022). *Research Methods in Public Administration and Public Management: An Introduction, 2nd Edition*. London & New York: Routledge.

Module 3:

- Daymon, C., & Holloway, I. (2011). *Qualitative Research Methods in Public Relations and Marketing Communications, 2nd Edition*. London & New York: Routledge.
- Kachuyevski, A., & Samuel, L. M. (Eds.) (2018). Doing Qualitative Research in Politics: Integrating Theory Building and Policy Relevance. Cham, Switzerland: Palgrave Macmillan.
- Merriam, S. B., & Tisdell, E. J. (2016*). Qualitative Research: A Guide to Design and Implementation, 4th Edition*. San Francisco, CA: Jossey-Bass (John Wiley & Sons, Inc.).

Module 4:

- Gupta, S. P. (2021). *Statistical Methods, 46th Edition*. New Delhi: Sultan Chand & Sons Educational Publishers.
- Kirk, R. E. (2008). *Statistics: An Introduction, 5th Edition*. Belmont: Wadsworth Publishing Co., Inc.
- Peck, R., Olsen, C., & Devore, J. L. (2016). *Introduction to Statistics and Data Analysis, 5th Edition*. Boston, MA,USA: Cengage Learning.
- Woodbury, G. (2002). *An Introduction to Statistics, 8th Edition*. Pacific Grove, CA, USA: Duxbury.

Module 5:

- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques, 2nd Revised Edition*. New Delhi:New Age International Publishers.
- Maimon, E., & Yancey, K. B. (2020). *A Writer's Resource: A Handbook for Writing and Research, 6th Edition*. New York: McGraw-Hill Education.
- Mligo, E. S. (2016). *Introduction to Research Methods and Report Writing: A Practical Guide for Students and Researchers in Social Sciences and the Humanities*. Eugene, Oregon: Wipf and Stock Publishers.

Additional information: Up to 5 candidates will be accommodated from other courses/disciplines after discussion with the course coordinator

Student responsibilities Attendance: At least 75% attendance will be necessary to be able to appear for the final exam.
Course prepared by: Dr. Chandan Kumar
Course reviewers 1. Dr. Mathew Gayman, Associate Professor, Department of Sociology, Georgia State University, Atlanta, Georgia, United States of America. **2.** Dr. Neeti, Associate Professor, Centre for Climate Change, Azim Premji University, Bengaluru, India.

Course title: Economics for Public Policy			
Course code: PPS 118	**No. of credits:** 2	**L-T-P:** 26-04-00	**Learning hours:** 30
Pre-requisite course code and title (if any): None			
Department: Department of Policy & Management Studies			
Course coordinator(s): Dr. Gopal K. Sarangi	**Course instructor(s):** Dr. Santosh K. Das		
Contact details: gopal.sarangi@terisas.ac.in			
Course type: Core	**Course offered in:** 1st Semester		

Course description

This introductory course primarily covers the impacts and implications of government policy by emphasizing the core and fundamental concepts, theories, principles, tools, and instruments of economics. The emphasis is laid on building students' critical thinking and analytical abilities in applying economic concepts to a range of public policy problems in evaluating and analyzing them. The central focus of this course is when governments intervene, what would be the form of intervention and what are the impacts of such interventions. It emphasizes how and why markets (one important mechanism for allocating scarce resources) operate, and under what conditions markets fail. What are the mechanisms to correct the market failure?

Learning objectives:

- To develop students' critical thinking around a range of public issues by using tools and techniques of economics
- To make students understand how and why markets work, when they fail, and mechanisms to correct such failures
- To build students' skill sets for analyzing, and interpreting public policy issues by using various economics tools and techniques

Course content

Module	Topic	L	T	P
1.	**Fundamentals** • Basic concepts and philosophy of Economics • Assumptions of perfectly competition markets and rationale actors • Inefficiency and imperfect markets • Welfare economics and policy applications	8	0	0
2.	**Market Failure: Definition, Causes and Typologies** • Why do markets fail? Causes of market failure; Externalities and public goods; Natural Monopolies; Free-rider problem; Common property problems; Information asymmetry • Behavioral economics in the context of market failure • Case studies in market failure in the infrastructure sector	6	2	0
3.	**Mechanisms to correct the Market Failure** • Introduction to various intervention tools such as command and control approach (CAC) versus Market-based Instruments (MBI's) such as taxes and cap and trade mechanisms • Role of regulation in market failure • Theories of economic regulation and its applications in the infrastructure sector • Theories of public expenditure	6	0	0
4.	**Tools for Economic Analysis of Public Policy** • Introduction to cost-benefit analysis • Present value analysis, choosing the discount rate • Policy analysis involving risks and uncertainty • Economic impact analysis tools • Project management tools in public policy analysis • Case study: Tools for catalyzing fossil fuel transitions	6	2	0
	Total	**26**	**4**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (20%)
- **Minor Test-2:** Group assignment in the form of group presentations of important public policy case studies (30%)
- **Major Test:** Written Test (50%)

Learning outcomes

Upon completion of this course, candidates would be able to:

1. understand the key concepts, theories, models, principles, tools, and techniques of economics to apply in the public policy context (Major Test)
2. understand and appraise the role of the market, market failure, and mechanisms for correcting the market failure (Minor Test-2 and Major Test)
3. develop the skills to interpret, and analyze the economic concepts and tools for resolving public problems (Minor Test-1 and 2)

Pedagogical approach

The course will be delivered through a mix of classroom lectures, quizzes, discussions, classroom exercises and assignments, and case studies discussion and presentation.

Suggested Readings

Core Readings:

- Case, K. E., Fair, R. C., & Oster, S. M. (2017). *Principles of Economics, 12th Edition*. Boston, MA: Pearson Education Inc.
- Mankiw, N. G. (2022). *Principles of Economics, 8th Edition*. Cincinnati, OH: South-Western College Publishing.
- Gruber, J. (2022). *Public Finance and Public Policy, 7th Edition*. New York: Worth Publishers.
- Musgrave, R. A., & Musgrave, P. B. (2017). *Public Finance in Theory and Practice, 5th Edition*. New York: McGraw Hill Education.
- Mishan, E. J. (2020). *Cost Benefit Analysis, 6th Edition*. London & New York: Routledge.
- Shepsle, K. A. (2010). *Analyzing Politics: Rationality, Behavior, and Institutions, 2nd Edition*. London: W.W. Norton & Company.
- Kolstad, C. D. (2010). *Environmental Economics, 2nd Edition*. New York: Oxford University Press.
- Hoekman, B. M., & Kostecki, M. M. (2009). *The Political Economy of the World Trading System: The WTO and Beyond, 3rd Edition*. New York: Oxford University Press Inc.

Additional Readings:

- Dasgupta, P. (2007). *Economics: A Very Short Introduction*. New York: Oxford University Press Inc.
- Friedman, M. & Friedman, R. D. (1990). *Free to Choose: A Personal Statement*. San Diego: Harcourt Brace Jovanovich.
- Landsburg, S. E. (2012). *The Armchair Economist: Economics & Everyday Life*. New York: Pocket Books.
- Banerjee, A., & Somanathan, R. (2007). The Political Economy of Public Goods: Some Evidence from India. *Journal of Development Economics*, 82(2): 287-314.
- Dhaliwal, I, & Hanna, R. (2017). The Devil is in the Details: The successes and limitations of bureaucratic reform in India. *Journal of Development Economics*, 124: 1-21.
- Mayda, A. M., & Rodrik, D. (2005). Why are Some People (and Countries) More Protectionist than Others? *European Economic Review*, 49(6):1393-1430.
- Lucas, R. E. B. (2008). *International Labor Migration in a Globalizing Economy*, Carnegie Papers. Washington, DC: Carnegie Endowment for International Peace. https://carnegie-production-assets.s3.amazonaws.com/static/files/international_migration_globalizing_economy.pdf.
- Summers, L. H. (2000). International Financial Crises: Causes, Prevention, and Cures. *The American Economic Review*, 90(2):1-16.
- Eichengreen, B. (2008). The Global Credit Crisis as History. University of California Berkeley Policy Paper. https://eml.berkeley.edu/~eichengr/global_credit_crisis_history_12-3-08.pdf.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course prepared by: Dr. Gopal K. Sarangi

Course reviewers

1. Prof. Badri Narayan Rath, Professor of Economics, Department of Liberal Arts, Indian Institute of Technology Hyderabad, Hyderabad, Telangana, India
2. Dr. Subir Sen, Associate Professor, Department of Humanities & Social Sciences, Indian Institute of Technology Roorkee (IITR), Roorkee, Uttarakhand, India.

Course title: International Collaborative Studio on Public Policy			
Course code: PPS 119	**No. of credits:** 1	**L-T-P:** 15-00-00	**Learning hours:** 15
Pre-requisite course code and title (if any): None			
Department: Department of Policy & Management Studies			
Course coordinator(s): Dr. Chandan Kumar		**Course instructor(s):** Dr. Chandan Kumar, Prof. Shaleen Singhal	
Contact details: chandan.kumar@terisas.ac.in			
Course type: Core		**Course offered in:** 1st Semester	

Course description

This course is intended to provide students with an international platform to have exposure to global, contemporary, and state-of-the-art perspectives on critical public policy domains with a focus on sustainability. This platform would help the students to directly interact with experts from academia and industry including popular foreign university centres/schools/departments leading the education in public policy, and independent centres across various domains having important roles in public policy processes. The course will be delivered through five or six structured panel discussions on select thematic areas considering the mutually convenient period across time zones of the involved collaborators. This platform would open opportunities for students for further continued formal/informal interactions with external experts to develop or conceptualise ideas or policy research questions to carry out their requirements for developing a policy paper or writing dissertations in the following semesters of the Programme. On a mutual understanding or acceptance between the external expert and the student as per the specific guidelines of the Programme and the Institute, the student can get an opportunity to work under the mentorship of the external experts too.

Learning objectives:

- To provide students with an understanding of key public policy issues and challenges of the global community and critically reflect on the context under discussion.
- To develop the skills among students to summarise the debates on any thematic policy issues.

Course content

Module	Topic	L	T	P
1.	International Discussion Panels shall be structured to focus on the public policy dimension of diverse, yet critical thematic areas linked to sustainability. • Climate Change • Urbanisation • Water resources • Energy • Digital Economy • Infrastructure Development • Industrial Development • Various Social Policies, including Food Security, Education, Health, Work & Employment, etc.	15	0	0
	Total	**15**	**0**	**0**

Evaluation criteria:

Course grades will be based on the concurrent evaluation process:

- **Assignment (90%):** Submission of the Summary Report of each panel discussion in a prescribed format as per the guidelines over the semester.
- **Active participation (10%):** Active participation in the Panel Discussion would be observed through students' presence/attendance and asking relevant questions to the experts.

Learning outcomes

Upon completion of this course, students would be able to:

1. enhance their understanding towards complexities and possible solutions for diverse sustainability dimensions such as climate change, urbanisation, water resources, energy, digital economy, infrastructure development, industrial development, etc. (All evaluations).
2. develop summaries or briefs based on the major discussion points of importance or the outcome of

the live expert panel discussions (All evaluations).
Pedagogical approach Panel Discussion sessions will be conducted in hybrid mode. The international or national experts from academia or industry/research organisations will participate in the thematic deliberations.
Student responsibilities • At least 75% attendance will be required. • Active participation in the organised panel discussions/webinars/workshops, etc. through asking relevant questions to the experts.
Course prepared by: Dr. Chandan Kumar and Prof. Shaleen Singhal
Course reviewers 1. Prof. Shannon B. Olsson, Global Director, Echo Network, India Office, Bengaluru, Karnataka, India; the Special Scientific Envoy to India with the Danish Academy of Technical Sciences (ATV). 2. Dr. Sunil Pandey, Director, Circular Economy and Waste Management, The Energy and Resources Institute (TERI), New Delhi, India

Course title: Policy Lab-I: Sectoral Policy Scoping

Course code: PPS 130	**No. of credits:** 1	**L-T-P**: 10-00-10	**Learning hours:** 15

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Mr. Shri Prakash	**Course instructor(s):** Mr. Shri Prakash

Contact details: shri.prakash@terisas.ac.in

Course Type: Core	**Course offered in:** Semester 1

Course Description

This course is designed to provide students with a practical environment to reflect upon the policy-relevant dimensions covered across the sectors and develop their skills to conduct evidence synthesis and scoping in order to identify key policy research questions. In the second part of this course, the students will take up some of the identified research questions to develop a policy paper considering their feasibility to be carried out. Some of the unattended research questions students may select for their dissertation work. This course is the first part of a two-part course that imparts practical knowledge of the processes of policymaking or developing a policy paper/brief. In this part, the students learn the initial process of identifying policy-relevant research questions through the scoping of literature and other evidence, and stakeholder consultation.

Course objectives

- To provide students with a platform to practically engage in evidence synthesis and systematically review the bibliographic databases and other sources of evidence to carry out a scoping exercise in the select policy-relevant domains.
- To equip students with the skill to identify and draft policy-relevant research questions based on the identified research gaps from the scoping exercise of the collated literature/evidence.
- To orient students to the relevance and essential conditions to carry out the stakeholder analysis including the process of identifying key stakeholders and critical research questions based on the discussions.
- To provide students with a platform to enhance their skills to conduct, moderate or lead the brainstorming sessions to extract critical research questions through reaching on consensus.

Course content

Module	Topic	L	T	P
1.	**Scoping of Policy Research Questions:** The students will be guided and instructed to identify policy-relevant research questions by scoping bibliographic databases, govt. reports, grey literature, and newspaper articles as per the context and domain under investigation. Based on the nature of policy domains or research investigation, the students would also conduct a stakeholder analysis to come up with critical issues for investigation. Based on the class size, the scoping activity and presentation of the outcome would be conducted in groups or as individual exercises.	10	0	10
	TOTAL	**10**	**0**	**10**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test:** Presentation of Scoping Excercise (40%)
- **Major Test:** Submission of Review Paper (60%)

Learning Outcomes:

Upon completion of this course, students would be able to:

- enhance their practical skills to delineate policy dimensions across the domains.
- augment their understanding to develop relevant policy research questions through scoping of literature and other evidence.

Pedagogical approach:

Systematic literature review; content analysis; brainstorming sessions, group, or individual presentation, etc.

Suggested readings:
It is a practical exercise using the knowledge gained from other taught courses and through the review process. Relevant literature, reports, textbooks, case studies, journals, databases will be suggested to the students based on the context and requirements.

Student responsibilities:

- At least 75% attendance will be required.
- Active classroom participation; Critical reflections during Brainstorming Sessions; Equal participation of the participants working in a group.

Course prepared by: Dr. Chandan Kumar and Mr. Shri Prakash

Course reviewers

1. Dr. Sunil Pandey, Director, Circular Economy and Waste Management, The Energy and Resources Institute (TERI), New Delhi, India.
2. Dr. Prashanth N. Srinivas, Director & Health Equity Cluster Lead, Institute of Public Health, Bengaluru, India.

Course title: Public Administration and Systems Management			
Course code: PPS 176	**No. of credits:** 3	**L-T-P:** 43-02-00	**Learning hours:** 45
Pre-requisite course code and title (if any): None			
Department: Department of Policy & Management Studies			
Course coordinator(s): Mr. Shri Prakash	**Course instructor(s):** Mr. Shri Prakash, & Others		
Contact details: shri.prakash@terisas.ac.in			
Course type: Core	**Course offered in:** 1st Semester		

Course description

With the changing role of the State and government, Public Administrators are now viewed by many as entrepreneurial managers, who are expected to be more entrepreneurial and result-focused. Public systems management is a developing theme lending a new dimension to the discipline of public administration. This course, divided into three modules, is designed to provide an overview of public administration and its role in successful implementation of public policies/programmes with emerging approaches. The first module begins with a discussion of the elements of governance and public administration, which can be described as two sides of a coin, governance refers primarily to government, and one of the pillars of government is public administration. The second module introduces public systems management with modern elements and techniques, and its integration with new technologies. Further, the third module focuses on micro-level planning and implementation through decentralised administration and local governance.

Learning objectives:

- To provide students with an overview of governance and public administration, along with the systems approach for organisational management.
- To discuss the nature, elements, techniques and considerations of public systems management and its integration with new technologies.
- To orient students to understand administrative decentralisation, and the role and functioning of local administrative bodies towards planning and implementation of public policies/programmes.

Course content

Module	Topic	L	T	P
1.	**Governance and Public Administration** • Governance: Concept, Contextual Uses, Forms, and Models • Role of Bureaucracy, Political Executive, Legislature, and the Judiciary in Governance • Changing nature of Public Services and State of Administrative Principles in the Twenty-first Century • Work Ethics in Public Administration • Organizational Conflict Resolution and Management • Leadership Skills • Systems Approach for Organizational Management: Closed-Systems Approach (Scientific Management; Administrative Management Movement; Weberian Bureaucracy), and Open-Systems Approach (The Hawthrone Experiment; Hierarchy of Needs; Humanistic Organization; Prismatic-Sala Model; Cooperative System)	14	0	0
2.	**Public Systems Management** • Public Systems Management: Concept, Nature, Scope, and Characteristics • New Technologies & Public Systems Management: Electronic Governance; Digital Governance; Challenges in Application of New Technology • Management Information System in Public Services: Evolution, Framework, Structure and Appraisal • Group Decision-Making Techniques: Brainstorming, Synectics, Delphi, Nominal Group Technique, Heuristic Technique • Accountability and Responsiveness in Public Systems Management • Transparency and Citizen's Right to Information	14	2	0

3.	**Decentralised Administration & Local Governance** • Federal Structure: Central and State Relationship • Understanding Decentralization in Contemporary Settings: Political, Functional, Administrative and Financial Decentralization • Organizational Structure and Administrative Functioning of Rural Local Bodies: Panchayati Raj System; Intra-Tier Distribution of Powers and Functions; Intra-Tier Implementation Hurdles • Organizational Structure and Administrative Functioning of Urban Local Bodies: Municipalities and Metropolitan Planning Committee • Partnership among Local Authorities and Special Purpose Agencies in various sectors, e.g., Education Sector, Health Sector, Telecom Sector, Agriculture Sector • Micro-level Planning formulation and implementation: Considerations and Constraints	15	0	0
	Total	**43**	**2**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (20%)
- **Minor Test-2:** Seminar Presentation and Field Report Submission based on the Group visit of Rural/Urban Local Bodies (30%)
- **Major Test:** Written Test/Term Paper submission and presentation (50%)

Learning outcomes

Upon completion of this course, candidates would be able to:

1. understand the fundamental concepts, elements and approaches related to governance and public administration or organisational management (All evaluations)
2. independently formulate a micro-level plan to implement any intervention/strategies through the local-level administrative bodies in rural/urban areas (Minor Test-2)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Social Policy Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

Module 1:

- Basu, R. (2019). *Public Administration in the 21st Century: A Global South Perspective*. London & New York: Routledge.
- Frederickson, H. G., Smith, K. B., Larimer, C. W., & Licari, M. J. (2012). *The Public Administration Theory Primer, 2nd Edition*. Boulder, Colorado: Westview Press.
- Harrison, N. E., & Geyer, R. (2022). *Governing complexity in the 21st century*. London & New York: Routledge.
- Laxmikanth, M. (2011). *Public Administration*. New Delhi: McGraw Hill Education (India) Pvt. Ltd.
- Laxmikanth, M. (2014). *Governance in India*. New Delhi: McGraw Hill Education (India) Pvt. Ltd.
- Rosenbloom, D. H., Kravchuk, R. S., & Clerkin, R. M. (2015). *Public Administration: Understanding Management, Politics, and Law in the Public Sector, 8th Edition*. New York: McGraw Hill Education.
- Singh, H., & Sachdeva, P. (2012). *Public Administration: Theory and Practice*. New Delhi: Pearson Education.
- Singh, H., & Singh, P. (2011). *Indian Administration*. New Delhi: Pearson Education.
- CBC. *Innovations in Public Administration*. A Report by Capacity Building Commission (CBC), Government of India. Available at: https://cbc.gov.in/sites/default/files/Innovations_final_report_17Feb.pdf

Module 2:

- Arora, R. K. (Ed.) (2001). *Management in Government: Concerns and Priorities*. Jaipur: Aalekh Publishers.
- Batley, R., & Larbi, G. (2004). *The Changing Role of Government: The Reforms of Public Services in Developing Countries*. England: Palgrave Macmillan.

- Bhattacharya, M. (2001). *New Horizons of Public Administration*. New Delhi: Jawahar Publishers and Distributors.
- Bresser-Periera, L. C. (2004). *Democracy and Public Management Reform-Building the Republican State*. Oxford: Oxford University Press.
- Ferlie, E., Lynn Jr, L. E., & Pollitt, C. (Eds.) (2007). *The Oxford Handbook of Public Management*. New York: Oxford University Press Inc.
- Osborne, S. P. (Ed.) (2002). Public Management: Critical Perspectives. London & New York: Routledge.
- Sahni, P., & Medury, U. (Eds.) (2003). *Governance for Development: Issues and Strategies*. New Delhi: Prentice-Hall India Learning Pvt. Ltd.
- Vayunandan, E., & Mathew, D. (Eds.) (2003). *Good Governance: Initiatives in India*. New Delhi: Prentice-Hall India Learning Pvt. Ltd.

Module 3:

- Chaubey, P. K. (2004). *Urban Local Bodies in India: Governance with Self Reliance*. New Delhi: Indian Institute of Public Administration.
- Ghosh, B., & Kumar, G. (2003). State Politics and Panchayats in India. New Delhi: Manohar Publications.
- Sachdeva, P. (2011). Local Government in India. New Delhi: Pearson Education (Dorling Kindersley (India) Pvt. Ltd.).
- Mullen, R. D. (Ed.) (2012). Decentralization, Local Governance, and Social Wellbeing in India: Do local governments matter? London & New York: Routledge.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course prepared by: Dr. Chandan Kumar

Course reviewers

1. Prof. Praveen K. Pathak, Professor, Centre for the Study of Regional Development, School of Social Sciences, Jawaharlal Nehru University, New Delhi, India
2. Dr. Smriti Das, Associate Professor, Strategic Management, XLRI, National Capital Region of Delhi, India.

Course title: Globalisation and Changing Geopolitics: Implications for Economic & Foreign Policies			
Course code: PPS 116	**No. of credits:** 2	**L-T-P:** 30-00-00	**Learning hours:** 30
Pre-requisite course code and title (if any): None			
Department: Department of Policy & Management Studies			
Course coordinator(s): Dr. Chandan Kumar	**Course instructor(s):** Prof. Nityananda, Amb. Ajay Malhotra		
Contact details: chandan.kumar@terisas.ac.in			
Course type: Core	**Course offered in:** 1st Semester		

Course description

Studying a country's economic and foreign policies is almost impossible without understanding the features of globalisation and dynamic geopolitics. This course will discuss the issues surrounding globalisation, and geopolitical and security challenges from an Indian perspective, and their implications on the economic and foreign policies. It will provide an understanding of how international agreements and institutions have been shaping up due to political, technological, and economic forces. The role of India as well as the shrinking policy space at the national level will also be discussed. The discussions on how ethics and equity can be mainstreamed into international law and global institutions will form an important part of the course. This course comprises four modules: the first module discusses the fundamentals of globalization, industrialization, international trade systems, and the learnings from global financial crises; the second module focuses on the Indian economy's transition in the globalizing world; the third module provides the basics of geopolitics and international relations issues in the contemporary world; and the fourth module focuses on India's international relations and foreign policy.

Learning objectives:

- To provide students with a basic understanding of the process of globalisation, the related institutional structure, and their implications on the Indian economy and associated policies.
- To orient students to critically understand the global geopolitics including security concerns from an Indian perspective and how India has been shaping the global discourse and institutions.

Course content

Module	Topic	L	T	P
1.	**Globalisation, Industrialization, Trade System and Financial Crisis** • Globalisation: concept; economic, political, and cultural dimensions; Challenges to Globalism • Phases and Theories of Industrial Development/Industrialization • World Trade System: Gains and losses in International Trade; Trade Theories and Public Policy; Political economy of the World Trading System • Learnings from the Global Financial Crisis: Keynesian Models after the Great Depression; The Bretton Woods System; The State of Crisis Theories; Sustainability in the Face of Crisis	6	0	0
2.	**Indian Economy in the Globalizing World** • Features of the Indian State in the Planning Era • India's Economic Transition: Neoliberal Globalization; Global Capitalism; Inclusive Development and Sustainability • India's Position and Approaches to International & Regional Trade Agreements and Organizations: e.g., GATT/WTO; SAARC, BIMSTEC, BBIN, etc. • Indian approach to Bilateral Investment Treaties (BIT) and Foreign Direct Investment (FDI) • Essential Principles of Indian Development Cooperation	6	0	0
3.	**Geopolitics and International Relations** • Understanding Geopolitics: using a framework focusing on place, scale, region, territory, network, and structure and agency • International Relations: Significance, Scope, and Approaches • Roots of Geopolitical Tensions in the 21st Century: USA-Russia-Europe • Major Contemporary Geopolitical Fissures: Syria, Ukraine, South China Sea, DPRK	8	0	0

4.	**India's International Relations & Foreign Policy** • India's Foreign Policy and its Relations with Major Powers (i.e., India's relations with the USA, China, Russia, and EU) • India's Policy to Immediate Neighbourhood: Pakistan, China, Nepal, Bangladesh, Sri Lanka, Bhutan. • Geopolitics in India's Extended Neighbourhood: West Asia; Central Asia; India's Act East Policy: Japan, ASEAN & Australia; Africa; Indian Ocean • India at the UN: UN Reforms & India's Quest for a Permanent UN Security Council Seat • India's Security Policy • India's role in Other Multilateral Bodies: Quad, BRICS, G20, etc.; India as a Green Leader: International Solar Alliance (ISA).	10	0	0
	Total	**30**	**0**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (30%)
- **Minor Test-2:** Seminar/Debate Sessions on select Geopolitical Issues (20%)
- **Major Test:** Written Test/Term Paper Submission & Presentation (50%)

Learning outcomes

Upon completion of this course, candidates would be able to:

1. understand the fundamental concepts and theoretical background of globalisation, geopolitics and international relations concerning India's role and implications (All evaluations)
2. develop critical thinking on the global discourse on international trade and geopolitics including the role and impacts of global institutions and agreements on Indian policies and institutions (All evaluations)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Social Policy Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

Module 1:

- Steger, M. B. (2003). *Globalization: A Very Short Introduction*. New York: Oxford University Press Inc.
- Stiglitz, J. E. (2003). *Globalization and its discontents*. New Delhi: Penguin Books India Pvt. Ltd.
- Nanda, N. (2008). *Expanding Frontiers of Global Trade Rules: The political economy dynamics of the international trading system*. London: Routledge.
- Thirlwall, A. P. (2013). *Economic Growth in an Open Developing Economy*. London: Edward Elgar.
- WTO (2015). *Understanding the WTO, 5th Edition*. Geneva: WTO.

Module 2:

- Basu, K., & Maertens, A. (2012). *The New Oxford Companion to Economics in India*. New Delhi: Oxford University Press.
- Chaturvedi, S., & Mulakala, A. (Eds.) (2016). *India's Approach to Development Cooperation*. London: Routledge.
- Nayar, B. R. (2014). *Globalization and India's Economic Integration*. Washington, D.C., US: Georgetown University Press.
- Nayyar, D. (2017). Economic Liberalisation in India: Then and Now. *Economic and Political Weekly*, 52(2), 41-48.

Module 3:

- Bordachev, T. (2022). *Europe, Russia, and the Liberal World Order: International Relations after the Cold War*. Routledge.
- Burchill, S., Linklater, A., Devetak, R., Donnelly, J., Nardin, T., Paterson, M., Reus-Snnit, C., & True, J. (2013). *Theories of International Relations, 5th Edition*. England: Palgrave Macmillan.

- Criekemans, D. (Ed.) (2021). *Geopolitics and International Relations: Grounding World Politics Anew*. Leiden, The Netherlands: Koninklijke Brill NV.
- Dittmer, J., & Sharp, J. (Eds.) (2014). *Geopolitics: An Introductory Reader*. Routledge.
- Dodds, K. (2019). *Geopolitics: A Very Short Introduction, 3rd Edition*. New York: Oxford University Press.
- Dugin, A. (2021). *The Theory of a Multipolar World*. Arktos Media Ltd.
- Dyvik, S. L., Selby, J., & Wilkinson, R. (Eds.) (2017). *What's the Point of International Relations?* London & New York: Routledge.
- Flint, C. (2022). *Introduction to Geopolitics, 4th Edition*. London & New York: Routledge.
- Kumar, Y. (2020). *Geopolitics in the Era of Globalisation; Mapping an Alternative Global Future*. London & New York: Routledge.
- Nestorovic, C. (2023). *Geopolitics and Business: Relevance and Resonance*. Springer.
- O'Donnell, F., & Ganguly, S. (Eds.) (2022). *Routledge Handbook of the International Relations of South Asia*. Routledge.
- Voskressenski, A. D. (2017). *Non-Western Theories of International Relations: Conceptualizing World Regional Studies*. Palgrave Macmillan.
- Ward, M. D. (Ed.) (2022). *The New Geopolitics*. Routledge.
- Wilkinson, P. (2007). *International Relations: A Very Short Introduction*. New York: Oxford University Press Inc.

Module 4:

- Beitelmair-Berini, B. (2021). *India's Grand Strategy and Foreign Policy: Strategic Pluralism and Subcultures*. Routledge.
- Bekkevold, J. I., & Kalyanaraman, S. (Eds.) (2021). *India's Great Power Politics: Managing China's Rise*. Routledge India.
- Bhatnagar, A. & Passi, R. (Eds.) (2016). *Neighbourhood First: Navigating Ties under Modi*. New Delhi: Observer Research Foundation and Global Policy Journal.
- Bhatnagar, S. (2020). *India's Pakistan Policy: How Think Tanks Are Shaping Foreign Relations*. Routledge India.
- Chakraborti, T., & Chakraborty, M. (2020). *India's Strategy in the South China Sea*. Routledge.
- Dhaliwal, S. (Ed.) (2021). *Indo-US Relations: Steering through the Changing World Order*. Routledge India.
- Dhaliwal, S. (Ed.) (2023). *India and the Changing World Order*. London & New York: Routledge.
- Gieg, P., Lowinger, T., Pietzko, M., Zürn, A., Bava, U. S., & Müller-Brandeck-Bocquet, G. (Eds.) (2021). *EU-India Relations: The Strategic Partnership in the Light of the European Union Global Strategy*. Cham, Switzerland: Springer Nature Switzerland AG.
- Hall, I. (2019). *Modi and the Reinvention of Indian Foreign Policy*. Bristol University Press.
- Hansel, M., Khan, R., & Levaillant, M. (Eds.) (2017). *Theorizing Indian Foreign Policy*. Routledge.
- Kim, Y-C. (Ed.) (2020*). China-India Relations: Geo-political Competition, Economic Cooperation, Cultural Exchange and Business Ties*. Springer International Publishing.
- Mayilvaganan, M. (Ed.) (2021). *ASEAN and India–ASEAN Relations: Navigating Shifting Geopolitics*. Routledge.
- Ogden, C. (2023). *Global India: The Pursuit of Influence and Status*. Routledge
- Panda, J. P., & Gunasekara-Rockwell, E. (Eds.) (2022). *Quad Plus and Indo-Pacific; The Changing Profile of International Relations*. Routledge.
- Pethiyagoda, K. (2021). *Indian Foreign Policy and Cultural Values*. Cham, Switzerland: Palgrave Macmillan (Springer Nature Switzerland AG).
- Schmidt, J. D., & Chakrabarti, S. (Eds.) (2021). *The Interface of Domestic and International Factors in India's Foreign Policy*. Routledge.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course prepared by: Dr. Chandan Kumar, Prof. Nityananda, and Amb. Ajay Malhotra

Course reviewers

1. Prof. S. P. Singh, Professor, Department of Humanities & Social Sciences, Indian Institute of Technology Roorkee (IITR), Roorkee, Uttarakhand, India.
2. Dr. R. R. Shukla, Associate Professor, Centre for Comparative Politics & Political Theory, School of International Studies, Jawaharlal Nehru University, New Delhi, India.

Course title: Policy Lab-II: Developing a Policy Paper

Course code: PPS 140	**No. of credits:** 3	**L-T-P**: 16-15-28	**Learning hours:** 45

Pre-requisite course code and title (if any): PPS 130. Policy Lab-I: Sectoral Policy Scoping

Department: Department of Policy & Management Studies

Course coordinator(s): Dr. Chandan Kumar	**Course instructor(s):** Dr. Chandan Kumar, Prof. Shaleen Singhal

Contact details: chandan.kumar@terisas.ac.in

Course Type: Core	**Course offered in:** 2nd Semester

Course Description

This interactive and experiential course is designed to guide students through the process of developing a comprehensive policy paper. It will equip students with the skills necessary to analyze public policy issues, conduct effective research, engage stakeholders, and articulate recommendations clearly and persuasively. Through a combination of lectures, workshops, peer reviews, and real-world applications, students will learn to craft impactful policy papers that can inform decision-making at various levels of governance.

This course is the second part of a two-part course that imparts practical knowledge of the processes of policymaking or developing a policy paper/brief. In the first part, the students learned the initial process of identifying policy-relevant research questions through the scoping of literature and other evidence, and stakeholder consultation. In this second part of this Policy Lab course, the students will work on the identified research questions to develop a policy paper.

This course is divided into four practical modules. The first module builds discussion on the scoping review and research questions and gaps identified during the first part of the Policy Lab course. In this module, students will be guided to explore and reflect upon the policy dimensions in their identified issues. The second module will focus on structuring the policy document through a writing skill workshop, the students will present their selected topics and discuss their formulation/conceptualization and finalize the structure of their policy document based on the feedback received. The third module is focused on finalizing the analysis required for discussing the selected topics and formulating actionable, measurable, and clear recommendations. The final module is dedicated to conducting a peer review workshop, where the first draft of the manuscript will be flipped among the student groups, and they will be asked to review, identify gaps including unclear phrases and recommend modifications. All these activities will be evaluated as part of the evaluation process under this course.

Course objectives

- To help students analyze and define a specific public policy issue after conducting thorough research, including literature reviews and stakeholder analysis.
- To assist students to develop critical thinking skills to evaluate evidence and identify potential policy solutions.
- To orient students to structurally organize and write a clear, concise, and persuasive policy paper.
- To provide students with a platform to enhance their skills to effectively present policy recommendations to relevant stakeholders.

Course content

Module	Topic	L	T	P
1.	**Understanding Policy Issues** • Introduction to Policy Papers: Purpose and importance of policy papers; Overview of the evidence-based policy-making process and assessment • Identifying a Policy Issue: Techniques for selecting and defining the policy problem; Engaging with current events and existing literature	8	0	0
2.	**Structuring the Policy Paper** • Based on the issues identified by the students in the course "PPS 130. Policy Lab-I: Sectoral Policy Scoping", each group or individual will present their conceptual frame, discuss and structure their manuscript based on the feedback received. • Writing Skills Workshops will be conducted focusing on techniques of clear and concise writing, and for fostering persuasive communication of ideas. Students will work on their selected issues, discuss, and get feedback.	2	5	10

3.	**Analysis and Recommendations** • Evidence-Based Analysis: Evaluating data and evidence to support policy recommendations; Assessing the feasibility and potential impact of proposed policies. Students will work on their selected issues, present, and get feedback. • Developing Policy Recommendations: Formulating actionable, measurable, and clear recommendations; Discussing implementation considerations and potential challenges. Students will work on their selected issues, present, and get feedback.	4	5	10
4.	**Review and Revision** • Peer Review Workshop will be conducted. Each manuscript developed by the students will be reviewed by the fellow students (peers) and will be asked to identify the gaps. This process will be evaluated. The workshop will be engaging in constructive feedback sessions with peers. Techniques for revising and improving draft papers based on feedback will be discussed. • Finalizing the Policy Paper: Integrating feedback and finalizing the manuscript for submission and final presentation.	2	5	8
	TOTAL	**16**	**15**	**28**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test 1:** Presentations based on the Structuring of Policy Paper (15%); Analysis & Recommendation (20%)
- **Minor Test 2**: Peer Review Workshop Presentation (15%)
- **Major Test:** Submission and Presentation of Policy Paper (50%)

Learning Outcomes:

Upon completion of this course, students would be able to:

1. enhance their practical skills and methodologies essential for effective policy analysis and writing (All evaluations)
2. contribute to public policy discussions and create impactful policy documents that address pressing societal issues (All evaluations)

Pedagogical approach:

Systematic literature review; content analysis; brainstorming sessions, group, or individual presentation, etc.

Suggested readings:

- Dunn, W. N. (2018). *Public Policy Analysis: An Integrated Approach, 6th edition*. New York: Routledge. https://doi.org/10.4324/9781315181226.
- Booth, W. C., Colomb, G. G., Williams, J. M., Bizup, J., & Fitzgeral, W. T. (2016). *The Craft of Research, 4th edition*. University of Chicago Press.
- Bardach, E., & Patashnik, E. M. (2019). *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving, 7th edition*. United Kingdom: SAGE Publications.
- Smith, C. F. (2023). *Writing Public Policy: A Practical Guide to Communicating in the Policy-Making Process, 6th edition*. Oxford: Oxford University Press.

Student responsibilities:

- At least 75% attendance will be required.
- Active classroom participation; Critical reflections during Brainstorming Sessions; Equal participation of the participants working in a group.

Course Outline prepared by: Dr. Chandan Kumar

Course reviewers

1. Dr. Sunil Pandey, Director, Circular Economy and Waste Management, The Energy and Resources Institute (TERI), New Delhi, India.
2. Dr. Prashanth N. Srinivas, Director & Health Equity Cluster Lead, Institute of Public Health, Bengaluru, India.

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Public Policy Assessment: Methods & Measurements

Course code: PPS 150	**No. of credits:** 2	**L-T-P:** 22-06-04	**Learning hours:** 30

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Dr. Chandan Kumar	**Course instructor(s):** Dr. Chandan Kumar

Contact details: chandan.kumar@terisas.ac.in

Course type: Core	**Course offered in:** 2nd Semester

Course description

Public Policy Assessment is a fundamental skill for public policy students as it capacitates to critically evaluate and improve policies that directly affect communities and society at large. Understanding assessment methods and measurements enables students to utilize data and evidence to make informed policy decisions. It fosters critical thinking about how policies can be evaluated based on their outcomes, feasibility, and impact. It helps students appreciate the need for transparency in assessing government actions and resource allocation. This course provides an in-depth exploration of policy appraisal and evaluation, equipping students with the theoretical knowledge and practical skills necessary to assess public policies effectively. Emphasizing a range of evaluation methods, this course will enable students to critically analyze the impact of policies and programs on various social, economic, and environmental outcomes.

This course is divided into four modules. The first module focuses on foundations and framework of policy appraisal, types of evaluation, and stages in planning and execution of policy evaluation. The second module discusses experimental and quasi-experimental impact evaluation methods. The third module includes discussion on other evaluation methods including theory-based impact evaluation methods, value-for-money evaluation methods, evidence synthesis methods, and others. The final module exposes students with various real-world case studies assessing different public policies across sectors.

Learning objectives:

- To help students understand the concepts and significance of policy appraisal and evaluation in the policymaking process.
- To explore and discuss various evaluation methods and expose students to analyze and interpret evaluation findings to assess policy effectiveness and impact.
- To engage students with real-world case studies to assess and apply evaluation principles and methodologies.

Course content

Module	Topic	L	T	P
1.	**Introduction to Policy Appraisal and Evaluation** • Appraisal and Evaluation: Meaning, Principles, and Purpose • Appraisal Framework: Rationale for Intervention, Longlist Appraisal, Shortlist Appraisal, Identification of the Preferred Option, Monitoring and Evaluation • The Five Case Model Framework: Strategic, Economic, Commercial, Financial, and Management dimension for Interventional Appraisal • Evaluation Considerations: Before, During, and After the Policy Implementation • Types of Evaluation: Process evaluation, Impact evaluation, Value-for-Money evaluation • Stages in Planning and Execution of an Evaluation • Conditions for selection of appropriate evaluation method: Nature of Intervention, Availability of Baseline Data, Presence of Instrument, Selection on Unobservables, Impact Measure of Interest	6	0	0
2.	**Experimental & Quasi-Experimental Impact Evaluation Methods** • Randomized Controlled Trials (RCT) • Interrupted time series analysis • Difference-in-Difference (DID) • Regression Discontinuity Design • Propensity Score Matching (PSM) • Synthetic control methods • Instrumental Variables (IV)	8	0	4

3.	**Other Evaluation Methods** • Theory-based Evaluation Methods: Contribution analysis; Realist evaluation; Process tracing; Qualitative comparative analysis • Value-for-Money Evaluation Methods: Social Cost-Effectiveness Analysis (CEA); Social Cost-Benefit Analysis (CBA) • Evidence Synthesis Methods: Rapid Evidence Assessment; Systematic Reviews, Meta-Analysis; Meta-Ethnography; Realist Synthesis • Other Evaluation Methods: The Delphi Technique; Critical Incident Method; Root Cause Analysis (RCA)	8	0	0
4.	**Case Studies in Policy Evaluation** • Comparative Analysis of Policy Evaluations: Examination of real-world case studies assessing different public policies across sectors (e.g., environment, infrastructure, employment, healthcare, education, social welfare, etc.). • Discussions on assessment methodologies used and lessons learned.	0	6	0
	Total	**22**	**6**	**4**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (30%)
- **Minor Test-2:** Case Study Presentation (20%)
- **Major Test:** Submission and Presentation of Project Evaluation Planning Protocol (50%)

Learning outcomes

Upon completion of this course, candidates would be able to:

1. get comprehensive understanding of policy appraisal and evaluation, including the essential tools and methodologies used in assessing public policies (All evaluations)
2. develop the skills necessary to critically analyze policy or programme effectiveness (All evaluations)

Pedagogical approach

Classroom lectures; Practical Exercises; Brainstorming Tutorials; Case studies

Suggested Readings

- Damonte, A., & Negri, F. (Eds.) (2023). *Causality in Policy Studies: A Pluralist Toolbox*. Cham, Switzerland: Springer Nature Publishing AG.
- Cerulli, G. (2022). *Econometric Evaluation of Socio-Economic Programs: Theory and Applications, 2nd edition*. Berlin, Germany: Springer-Verlag GmbH.
- Dale, R. (2004). *Evaluating Development Programmes and Projects, 2nd edition*. New Delhi: Sage Publications India Pvt Ltd.
- Varone, F., Jacob, S., & Bundi, P. (Eds.) (2023). *Handbook of Public Policy Evaluation*. Glos, UK: Edward Elgar Publishing Ltd.
- White, H., & Raitzer, D. A. (2017). *Impact Evaluation of Development Interventions: A Practical Guide*. Manila, Philippines: Asian Development Bank.
- Linfield, K. J., & Posavac, E. J. (2019). *Program Evaluation Methods and Case Studies, 9th edition*. New York: Routledge.
- Barrett, N. F. (2016*). Program Evaluation: A Step-by-Step Guide (Revised Edition)*. Springfield, IL: Sunnycrest Press.
- Guo, S., & Fraser, M. W. (2015). *Propensity Score Analysis: Statistical Methods and Applications, 2nd edition*. California, US: SAGE Publications, Inc.
- Reichardt, C. S. (2019). Quasi-Experimentation: A Guide to Design and Analysis. New York: The Guilford Press.
- Cattaneo, M. D., Idrobo, N., & Titiunik, R. (2024). *A Practical Introduction to Regression Discontinuity Designs: Extensions*. Cambridge, UK: Cambridge University Press.

- Woudenberg, F. (1991). An evaluation of Delphi. *Technological Forecasting and Social Change*, *40*(2), 131-150. https://doi.org/10.1016/0040-1625(91)90002-W
- Nasa, P., Jain, R., & Juneja, D. (2021). Delphi methodology in healthcare research: How to decide its appropriateness. *World Journal of Methodology*, *11*(4), 116. https://doi.org/10.5662/wjm.v11.i4.116
- Dinges, M., Wang, A., & Schuch, K. (2020). Using the Delphi Method in evaluations - incorporating a future oriented perspective in evaluations. *fteval Journal for Research and Technology Policy Evaluation*, *50*, 44-50. https://repository.fteval.at/id/eprint/524/
- Serrat, O. (2017). The Critical Incident Technique, in *Knowledge Solution,* pp. 1077–1083. Singapore: Springer. https://doi.org/10.1007/978-981-10-0983-9_123.
- Williams, P. M. (2001). Techniques for root cause analysis. *Proceedings (Baylor University. Medical Center)*, *14*(2), 154. https://doi.org/10.1080/08998280.2001.11927753.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Dr. Chandan Kumar

Course Reviewers

1. Prof. S. P. Singh, Professor of Economics, Department of Humanities and Social Sciences, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India.
2. Dr. Seema Sangita, Associate Professor, Centre for Economic Studies and Planning, School of Social Sciences, Jawaharlal Nehru University, New Delhi, India.

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Water and Sustainable Development: Policies & Management

Course code: PPS 154	**No. of credits:** 2	**L-T-P:** 24-06-00	**Learning hours:** 30

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Prof. Arun Kansal	**Course instructor(s):** Prof. Arun Kansal

Contact details: akansal@terisas.ac.in

Course type: Core	**Course offered in:** 2nd Semester

Course description

Water governance and management are integral to sustainable development as they directly influence human health, economic prosperity, environmental sustainability, and social equity. Effective governance frameworks and management practices facilitate the responsible use of water resources, ensuring that they can support current and future generations while fostering resilience to climate change and enhancing overall community well-being. Prioritizing water governance is crucial for achieving a more just, sustainable, and equitable world.

This course offers an in-depth examination of the critical relationship between water resources, sustainability, and governance. As global water challenges continue to escalate, understanding the fundamental water-related issues from a management and policy perspective is essential for future leaders and practitioners in the field. Through a combination of theoretical frameworks, practical insights, and real-world case studies, students will explore how effective water management and innovative policies can contribute to sustainable development goals.

The course is divided into four modules. The first module discusses the role of water as component of ecosystem and sustainability. Students will explore the integral role of water in sustainable development frameworks, interconnections between water, ecosystems, health, and economic stability, as well as the social justice dimensions associated with water access and equity. Focusing on water governance and management, the second module examines institutional frameworks, approaches, policy instruments, and stakeholder engagement mechanisms that shape water management practices. Students will investigate various governance models, including integrated water resources management (IWRM), participatory approaches, and the roles played by governmental and non-governmental entities in ensuring effective and equitable water management. This module also assesses the water management in India. The third module addresses the multifaceted challenges in water policy, including climate change, pollution, over-extraction, and competing demands. Students will critically analyse existing policies and frameworks that govern water use and sustainability while exploring innovative solutions, such as advanced technologies, public-private partnerships, and community-led initiatives aimed at enhancing resilience and addressing water scarcity. The final module will engage students with real-world case studies from various regions to understand best practices and effective policy initiatives in water management.

Learning objectives:

- To help students understand and analyze the role of water in sustainability discourse and its implications for sustainable development.
- To orient students to water governance frameworks and management strategies that influence water resource allocation and use.
- To help students identify the key challenges facing water policy and explore innovative solutions and technological advancements.
- To assist students to apply knowledge from case studies of successful water management practices and policy initiatives to develop actionable strategies for diverse contexts.

Course content

Module	Topic	L	T	P
1.	**Water in Sustainability Discourse** • Water as component of Ecosystem: Aquatic Ecosystems, Terrestrial Ecosystem; Nutrient Cycling; Hydrological Cycle; Climate Regulation; Soil Formation and Quality; Ecosystem Services • Global and national water distribution and availability issues • Linkages between water management and other sectors (health, agriculture, energy); Water-Energy-Food nexus	7	0	0
2.	**Political Economy of Water and its Governance** • Evolution of understanding of water security and governance	10	0	0

	• Transboundary water conflicts; Water access, ownership and rights; Privatization and commercialization of water • Water Governance Frameworks: Institutional frameworks for water management; Stakeholder roles: government, communities, NGOs, and private sector • Water Management Approaches: River basin approach; Watershed approach; Community management; Integrated Water Resources Management (IWRM) • Policy Instruments for Water Management: Economic instruments - pricing, taxes, and subsidies; Regulatory measures and compliance mechanisms • Water Management in India: Assessing water availability and quality (Water Stress, Water Quality Index); Status and Trends of Surface Water and Ground Water exploitation and pollution; Responsible factors – technical, policy and institutional factors; Sectoral analysis of water management (Agriculture, Domestic, Industry, Power – Thermal and Hydro); Water Interlinking; Regional consciousness and inter-state issues (water sharing)			
3.	**Challenges and Innovations in Water Policy** • Climate Change impacts; Pollution; Overexploitation; Water scarcity and competing demands; Habitat alteration due to human activities, including dam construction, land use change, and urbanization; Inequity in Access to Water; Fragmented Governance and Institutional Challenges; Public Awareness and Engagement; Infrastructure Gaps; Regulatory and Legislative Challenges • Adaptive water management strategies • Role of technology in enhancing water efficiency (smart water management) • Innovative practices in water recycling and desalination	7	0	0
4.	**Case Studies on Best Practices & Policy Initiatives** • International Cases, such as, Singapore: Integrated Water Management; Netherlands: Delta Works; Australia: Water Reform in the Murray-Darling Basin; Israel: Innovative Water Technologies; South Africa: The National Water Act; Ghana: Community-Based Water Management • Indian Cases, such as, *Jal Jeevan* Mission; Sustainable Groundwater Management in Rajasthan; Narmada River Valley Project; Andhra Pradesh: Krishna River Management; Integrated Watershed Management in Maharashtra; Karnataka: *Neeravari Naital* Scheme	0	6	0
	Total	**24**	**6**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (30%)
- **Minor Test-2:** Case Study Presentation on select cases based on Module-4 (20%)
- **Major Test:** Written Test/Term Paper Submission & Presentation (50%)

Learning outcomes

Upon completion of this course, candidates will:

1. have a comprehensive understanding of the complexities surrounding water resources in the context of sustainable development (All evaluations)
2. develop critical thinking and innovative approaches essential for addressing contemporary water challenges, thereby preparing students for impactful careers in water management, policy-making, and sustainable development (All evaluations)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

Module 1:

- Loucks, D. P., & Gladwell, J. S. (1999). *Sustainability Criteria for Water Resource Systems*. Cambridge, UK: Cambridge University Press.
- Chorley, R. J. (1969). *Water, earth and man: a synthesis of hydrology, geomorphology and socioeconomic geography*. London: Methuen Young Books.
- Ehrlich, P. R., Holdren, J. P., & Ehrlich, A. H. (1978). *Ecoscience: population, resources, environment, 3rd edition*. San Franscisco: W. H. Freeman.
- Shaw, E. M. (1994). *Hydrology in Practice, 3rd edition*. London: Chapman & Hall.
- Rodríguez-Iturbe, I., & Porporato, A. (2005). *Ecohydrology of Water-Controlled Ecosystems: Soil Moisture and Plant Dynamics*. Cambridge: Cambridge University Press.
- Horne, A. C., Webb, J. A., Stewardson, M. J., Richter, B., & Acreman, M. (Eds.) (2017). *Water for the Environment: From Policy and Science to Implementation and Management*. London, UK: Academic Press (Elsevier).
- Gunawardena, E. R. N., Gopal, B., & Kotagama, H. (Eds.) (2012). *Ecosystem and Integrated Water Resources Management in South Asia*. New Delhi: Routledge.
- Chakraborty, S., Chatterjee, A., & Kumar, P. (Eds.) (2025). *Urban Water Ecosystems in Africa and Asia: Challenges and Opportunities for Conservation and Restoration*. Oxon & New York: Routledge.
- Arya, M. (2019). *Spatial Ecology of Water*. AADI Centre.
- Polunin, N. V. C. (Ed.) (2010). *Aquatic Ecosystems: Trends and Global Prospects*. Cambridge: Cambridge University Press.
- Wohl, E. (2017). *Sustaining River Ecosystems and Water Resources*. Cham, Switzerland: Springer.
- Kholod, N., Evans, M., Khan, Z., Hejazi, M., & Chaturvedi, V. (2021). Water-energy-food nexus in India: A critical review. *Energy and Climate Change*, *2*, 100060. https://doi.org/10.1016/j.egycc.2021.100060

Module 2:

- Pahl-Wostl, C. (2015). *Water Governance in the Face of Global Change: From Understanding to Transformation*. Cham: Springer Nature Switzerland AG.
- Chadha, G., & Pandya, A. B. (Eds.) (2021). *Water Governance and Management in India: Issues and Perspectives, Volume 2*. Singapore: Springer Verlag.
- Katko, T. S., Juuti, P. S., Schwartz, K., & Rajala, R. P. (Eds.) (2013). *Water Services Management and Governance: Lessons for a Sustainable Future*. London, UK: IWA Publishing.
- Grigg, N. S. (2010). *Governance and Management for Sustainable Water Systems*. London, UK: IWA Publishing.
- Varis, O., Tortajada, C., & Biswas, A. K. (Eds.) (2008). *Management of Transboundary Rivers and Lakes*. Springer.
- Biswas, A. K., Tortajada, C., & Rohner, P. (Eds.) (2018). *Assessing Global Water Megatrends*. Singapore: Springer Nature Singapore Pte. Ltd.
- World Water Council (Ed.) (2018). *Global Water Security: Lessons Learnt and Long-Term Implications*. Singapore: Springer Nature Singapore Pte. Ltd.
- Scudder, T. (2019). *Large Dams: Long Term Impacts on Riverine Communities and Free Flowing Rivers*. Singapore: Springer Nature Singapore Pte. Ltd.
- Haie, N. (2021). *Transparent Water Management Theory: Sufficiency in Sequity*. Singapore: Springer Nature Singapore Pte. Ltd.
- Kumar, M. D., Bassi, N., & Kumar, S. (2022). *Drinking Water Security in Rural India: Dynamics, Influencing Factors, and Improvement Strategy*. Singapore: Springer Nature Singapore Pte. Ltd.
- Loucks, D. P., Stedinger, J. R., & Haith, D. A. (1981). *Water Resource Systems Planning and Analysis*. Englewood Cliffs, NJ: Prentice Hall.
- Simonvic, S. P. (2009), *Managing water resources: Methods and tools for a system approach*. UNESCO Publishing, France.
- Prakash, A., Kumar, N., Chhatre, A., Thakkar, S., & Dar, A. (2024). Navigating India's groundwater crisis: legal and institutional perspectives on regulation and conservation. *Water Policy*, *26*(8), 835–855. https://doi.org/10.2166/wp.2024.123.
- Mukherji, A. (2022). Sustainable Groundwater Management in India Needs a Water-Energy-Food Nexus Approach. *Applied Economic Perspectives and Policy*, *44*(1), 394-410. https://doi.org/10.1002/aepp.13123.

Module 3:

- Hüttl, R. F., Bens, O., Bismuth, C., & Hoechstetter, S. (Eds.) (2016). *Society - Water - Technology: A Critical Appraisal of Major Water Engineering Projects*. Cham, Switzerland: Springer International Publishing AG.
- Biswas, A. K., & Tortajada, C. (Eds.) (2022). *Water Security Under Climate Change*. Singapore: Springer Nature Singapore Pte. Ltd.
- Biswas, A. K., & Tortajada, C. (Eds.) (2016). *Water Security, Climate Change and Sustainable Development*. Singapore: Springer Science + Business Media Singapore.
- Edalat, F. D., & Abdi, M. R. (2017). *Adaptive Water Management: Concepts, Principles and Applications for Sustainable Development*. Cham, Switzerland: Springer International Publishing AG.
- Mysiak, J., Henrikson, H. J., Sullivan, C., Bromley, J. & Pahl-Wostl, C. (Eds.) (2010). *The Adaptive Water Resource Management Handbook*. London, UK: Earthscan. https://www.pseau.org/outils/ouvrages/earthscan_ltd_the_adaptive_water_resource_management_handbook_2010.pdf.
- Pahl-Wostl, C., Kabat, P., & Möltgen, J. (Eds.) (2007). *Adaptive and Integrated Water Management: Coping with Complexity and Uncertainty*. Heidelberg: Springer-Verlag Berlin.
- Evans, R. G., & Sadler, E. J. (2008). Methods and technologies to improve efficiency of water use. *Water Resources Research*, *44*(7). https://doi.org/10.1029/2007WR006200.
- Geetha Varma, V. (2021). Water-efficient technologies for sustainable development. *Current Directions in Water Scarcity Research*, *6*, 101-128. https://doi.org/10.1016/B978-0-323-91838-1.00009-9.
- Antu, U. B., Islam, M. S., Ahmed, S., Arifuzzaman, M., Saha, S., Mitu, P. R., Sarkar, A. R., Mahiddin, N. A., Ismail, Z., Ibrahim, K. A., & Idris, A. M. (2024). Emerging technologies for efficient water use in agriculture: A review of current trends and future directions. *Journal of Water Process Engineering*, *68*, 106317. https://doi.org/10.1016/j.jwpe.2024.106317.
- Pérez-Urdiales, M., & García-Valiñas, M. Á. (2016). Efficient water-using technologies and habits: A disaggregated analysis in the water sector. *Ecological Economics*, *128*, 117-129. https://doi.org/10.1016/j.ecolecon.2016.04.011.
- Shokri, A., & Sanavi Fard, M. (2022). A sustainable approach in water desalination with the integration of renewable energy sources: Environmental engineering challenges and perspectives. *Environmental Advances*, *9*, 100281. https://doi.org/10.1016/j.envadv.2022.100281.
- Shiferaw, B. A., Reddy, V. R., & Sharma, B. (2023). Groundwater governance under climate change in India: lessons based on evaluation of World Bank interventions. *International Journal of Water Resources Development*, *40*(3), 401–424. https://doi.org/10.1080/07900627.2023.2207694.
- Hong, S., Park, K., Kim, J., Alayande, A. B., & Kim, Y. (Eds.) (2023). *Seawater Reverse Osmosis (SWRO) Desalination: Energy consumption in plants, advanced low-energy technologies, and future developments for improving energy efficiency*. London, UK: IWA Publishing.
- Salinas-Rodriguez, S. G., & Villacorte, L. O. (Eds.) (2023). *Experimental Methods in Desalination and Water Treatment*. London, UK: IWA Publishing.
- Bhattacharya, P., Armienta, M. A., Mahlknecht, J., & Kumar, M. (Eds.) (2023). *Best Practice Guide on Control of Fluoride in Drinking Water*. London, UK: IWA Publishing.
- Bryjak, M., Kabay, N., Rivas, B. L., & Bundschuh, J. (Eds.) (2016). *Innovative Materials and Methods for Water Treatment: Solutions for Arsenic and Chromium Removal*. London, UK: Taylor & Francis Group.

Module 4:

- Chen, D. C., Maksimovic, C., & Voulvoulis, N. (2011). Institutional capacity and policy options for integrated urban water management: a Singapore case study. *Water Policy*, *13*(1), 53–68. https://doi.org/10.2166/wp.2010.073.
- Jensen, O., & Nair, S. (2019). Integrated Urban Water Management and Water Security: A Comparison of Singapore and Hong Kong. *Water*, *11*(4), 785. https://doi.org/10.3390/w11040785.
- Hu, X. (2020). Sustainable Water Demand Management: A Case Study of Singapore's Accommodation Sector. *IOP Conference Series: Earth and Environmental Science*, *576*, 012005. https://iopscience.iop.org/article/10.1088/1755-1315/576/1/012005.

- Banerjee, C., Bhaduri, A., & Saraswat, C. (2022). Digitalization in Urban Water Governance: Case Study of Bengaluru and Singapore. *Frontiers in Environmental Science*, *10*, 816824. https://doi.org/10.3389/fenvs.2022.816824.
- Verdon-Kidd, D. C., Sandi, S. G., Metcalfe, A. G., & Kidd, L. J. (2023). Challenges of classifying and mapping perennial freshwater systems within highly variable climate zones: A case study in the Murray Darling Basin, Australia. *Science of The Total Environment*, *905*, 167260. https://doi.org/10.1016/j.scitotenv.2023.167260.
- Connell, D., & Grafton, R. Q. (2011). Water reform in the Murray-Darling Basin. *Water Resources Research*, *47*(12). https://doi.org/10.1029/2010WR009820.
- Samnakay, N., Alexandra, J., Wyborn, C. A., & Bender, I. (2024). Climate adaptive water policy in Australia's Murray Darling basin: soft options or hard commitments? *Ecology & Society*, *29*(1), 1. https://doi.org/10.5751/ES-14578-290101.
- Marin, P., Tal, S., Yeres, J., & Ringskog, K. (2017). *Water Management in Israel: Key Innovations and Lessons Learned for Water-Scarce Countries*. Washington, DC: World Bank. https://openknowledge.worldbank.org/server/api/core/bitstreams/2577d429-0114-5d64-884e-8ba80ecd82f6/content.
- Friedler, E. (2000). Water reuse — An integral part of water resources management:: Israel as a case study. *Water Policy*, *3*(1), 29-39. https://doi.org/10.1016/S1366-7017(01)00003-4.
- Kramer, I., Tsairi, Y., Roth, M. B., Tal, A., & Mau, Y. (2022). Effects of population growth on Israel's demand for desalinated water. *Npj Clean Water*, *5*(1), 1-7. https://doi.org/10.1038/s41545-022-00215-9.
- Svahn, K. (2011). Women's Role and Participation in Water Supply Management - The Case Study of the Republic of Ghana. Institutionen för Geovetenskaper, Uppsala Universitet. https://www.diva-portal.org/smash/get/diva2:482130/FULLTEXT01.pdf4.
- Sedegah, D. D., Agyekum, M. W., & Kyeremeh, B. (2023). Local-level water conservation and management practices in rural communities: A case study in Dormaa Municipality, Bono Region, Ghana. *Irrigation and Drainage*, *72*(4), 1095-1108. https://doi.org/10.1002/ird.2849.
- Abunyewah, M., Erdiaw-Kwasie, M. O., Arhin, P., Acheampong, M. Y., & Okyere, S. A. (2022). Rural water project planning and evaluation in Ghana: a new methodological perspective. *Water Policy*, *24*(12), 1913–1929. https://doi.org/10.2166/wp.2022.157.
- Maphela, B., & Cloete, F. (2019). Johannesburg's implementation of the National Water Act, 1998 in Soweto, South Africa. *Development Southern Africa*, *37*(4), 535–552. https://doi.org/10.1080/0376835X.2019.1647834.
- Stein, R. (2002). Water Law in a Democratic South Africa: A Country Case Study Examining the Introduction of a Public Rights System. Allocating and Managing Water for a Sustainable Future: Lessons from Around the World (Summer Conference, June 11-14). https://scholar.law.colorado.edu/allocating-and-managing-water-for-sustainable-future/66.
- Tewari, DD. (2009). A detailed analysis of evolution of water rights in South Africa: an account of three and a half centuries from 1652 AD to present. *Water SA*, *35*(5), 693-710. Retrieved November 30, 2024, from http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S1816-79502009000500019&lng=en&tlng=en.
- Olley, J., Cvitanovic, M., Ginige, T., & Bunt-MacRury, L. (2024). A systematic literature review of sustainable water management in South Africa. *Sustainable Water Resources Management*, *10*, 162. https://doi.org/10.1007/s40899-024-01135-x.
- Sankala Foundation. (2024). Jal Jeevan Mission - Har Ghar Jal: A Study of Access to Clean Tap Water to Every Rural Home in India. Sankala Foundation, New Delhi.
- Sahoo, M. K., Divi, S., Rathod, B., & Vekariya, H. (2023). India's Prospects for Attaining Sustainable Development Goals on Health & Sanitation: A Critical Analysis of Swachh Bharat Abhiyan & Jal Jeevan Mission. *International Journal of Environmental Sciences*, *9*(2), 74-87. https://www.theaspd.com/resources/5.%20Manoj%20K.%20Sahoo.pdf.
- Negi, U., Chaturvedi, K., & Bassi, N. (2023). India's Jal Jeevan Mission is Putting Women at the Centre of Water Access. https://www.ceew.in/blogs/how-jal-jeevan-mission-aims-to-provide-safe-clean-water-access-for-rural-households-and-empower-women-in-india.
- Singh, A. P., & Bhakar, P. (2021). Development of groundwater sustainability index: a case study of western arid region of Rajasthan, India. *Environment, Development and Sustainability*, *23*, 1844–1868. https://doi.org/10.1007/s10668-020-00654-9.
- Reddy, V. R. (2010). Water sector performance under scarcity conditions: a case study of Rajasthan, India. *Water Policy*, *12*(5), 761–778. https://doi.org/10.2166/wp.2010.135.

- CEEW. Water Management Programme: Tarun Bharat Sangh. Framework for India's Sustainable Agriculture Initiatives. https://www.ceew.in/sustainable-agriculture-initiatives/tarun-bharat-sangh-johad-water-conservation-harvesting-and-revitalisation.
- Venot, J.-P., Bharati, L., Giordano, M., & Molle, F. (2011). Beyond water, beyond boundaries: spaces of water management in the Krishna river basin, South India. *The Geographical Journal*, *177*(2), 160–170. http://www.jstor.org/stable/41238025.
- Bharati, L., Anand, B. K., & Smakhtin, V. (n.d.). Analysis of the Inter-basin Water Transfer Scheme in India: A Case Study of the Godavari–Krishna Link. https://publications.iwmi.org/pdf/H041799.pdf.
- Bhaduri, A., Amarasinghe, U. A., & Shah, T. (2008). Benefits of irrigation water transfers in the National River Linking Project: a case study of Godavari (Polavaram)-Krishna link in Andhra Pradesh. Conference Papers h041803, International Water Management Institute.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Prof. Arun Kansal

Course Reviewers

1. Prof. Ajay R. Tembhurkar, Professor of Environmental Engineering, Department of Civil Engineering, Visvesvaraya National Institute of Technology (VNIT), Nagpur, Maharashtra, India.
2. Dr Geoff Goodwin, Faculty of Global Political Economy, School of Politics and International Studies (POLIS), University of Leeds, Leeds, United Kingdom.

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Energy and Sustainable Development

Course code: PPS 155	**No. of credits:** 2	**L-T-P:** 28-02-00	**Learning hours:** 30

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Dr. Gopal K. Sarangi	**Course instructor(s):** Dr. Gopal K. Sarangi, Dr. Sapan Thapar

Contact details: gopal.sarangi@terisas.ac.in

Course type: Core	**Course offered in:** 2nd Semester

Course description

Energy policies are vital for achieving sustainable development as they directly impact environmental sustainability, economic prosperity, and social equity. Energy is at the centre of achieving both the climate and the sustainable development goals that the world has committed to. At the same time ensuring its availability, efficient use and access is critically important to the growth and development of any country. The course is designed to enable the student to understand the challenges of understanding energy security, its complex interactions with the economy and society as well as the tools available to assess impact on multiple, often competing goals.

Learning objectives:

The objective of the course is to sensitize the student to the role of energy in society, the multiple means of meeting energy service demands, global energy linkages, emerging scenarios of vulnerability and the instruments and tools available for effective energy policy formulation. At the end of the course, the student will have an enhanced understanding of the need for an integrated energy policy and the impact of alternative policies on the energy security of a country and its populace. By the end of the course, the students will be able to:

- frame issues from a public policy energy and sustainability perspective
- create a matrix of cross-sectoral issues and linkages
- assess unintended outcomes and risks
- assess Policy implementation challenges
- have an understanding of path dependencies

Course content

Module	Topic	L	T	P
1.	**Foundation on Energy and Sustainability** • Comprehensive overview of different forms and sources of energy being used, particularly in the context of India • Distinction between primary and secondary forms of energy; Different units of measurement used conventionally and their equivalence. • Total energy mix of the country with regard to the availability of different forms of energy, distribution, supply mechanism and end-uses. • Linkages of Energy with Sustainable Development • Linkages of energy with other critical sectors health, education, water, agriculture, livelihood, urban, transport, and climate change	4	0	0
2.	**Energy Access, Poverty, Security, and Sustainability** • Energy transition issues and sustainability considerations such as transition to green energy regime, transition at different scales, etc. Case of coal transition in India, transition in DRE space, policy instruments level transitions • Energy Poverty and energy vulnerabilities: Concepts of energy poverty and energy access challenges in developing regions; Impact of energy access on health, gender, education, and economic opportunities. • Energy Security: Energy security and energy dependence at different levels in the society such as – household, community, company and a country; Geopolitics associated with energy security concerns; Trading and Transnational flow, issues of CBAM and energy, Control over strategic areas from an energy security perspective. • Gender and Energy: Examination of the gender dimensions of energy access and use; Empowering women through sustainable energy initiatives.	10	0	0

3.	**Energy Market, Pricing and Finance** • Energy demand and supply; Energy demand theories, elasticities of energy demand, energy demand at sectoral and aggregated level, demand side management (DSM) techniques; energy efficiency and energy demand, economic theories and principles of energy supply; economics of power generation both renewables and non-renewables; case studies from India • Changing structure and forms of energy market; different pricing principles; pricing under regulation; pricing under competition, pricing of energy and instruments of energy pricing in Indian context such as open access, green open access, bidding and auctions, pricing in open markets • Theories of energy finance, Source of energy financing, Energy project financing, Discounted cash flow analysis, Estimating Net Present Value (NPV), Estimating cost of capital, Financing of renewable energy, Renewable policy instruments and institutions for renewable energy and climate finance, Energy transition financing, financial risk management for energy projects, Carbon market as an instrument of climate finance.	10	0	0
4.	**Energy Case Studies and Business Models** • Analysis of case studies to examine linkages with other sectors, risks, dependencies, sustainable development, scale etc. For example: DRE cases studies and business models, Case studies and business models on energy pricing and market such as renewable energy certificate (REC) and Energy savings certificate (ESCerts), Case studies on green tariffs and green energy trading.	4	2	0
	Total	**28**	**2**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (20%)
- **Minor Test-2:** Case Study Presentation on select cases based on Module-4 (30%)
- **Major Test:** Written Test/Term Paper Submission & Presentation (50%)

Learning outcomes

Upon completion of this course, candidates will be:

1. equipped with the knowledge and skills necessary to navigate the complexities of energy systems in the context of sustainable development (All evaluations)
2. developing critical thinking and innovative approaches essential for contributing to the development of effective energy policies that address current challenges while promoting a sustainable future for all (All evaluations)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

- Statista. Energy consumption worldwide from 2000 to 2022, with a forecast until 2050, by energy source. https://www.statista.com/statistics/222066/projected-global-energy-consumption-by-source/
- Dar-Mousa, R. N., & Makhamreh, Z. (2019). Analysis of the pattern of energy consumptions and its impact on urban environmental sustainability in Jordan: Amman City as a case study. *Energy, Sustainability and Society*, *9*, 15. https://doi.org/10.1186/s13705-019-0197-0.
- Thomson, G. (2016). *Environment, Energy and Sustainable Development*. Syrawood Publishing House.
- Dunlap, R. A. (2018). *Sustainable Energy, 2nd edition*. Cengage.
- Collins, L. (2016). *Energy and Sustainability*. Callisto Reference.
- Mentel, G., & Majewski, S. (Eds.) (2023). *Energy Policy, Regulation and Sustainable Development*. MDPI AG.
- Zhironkin, S., & Rybar, R. (Eds.) (2022). Sustainable Development Processes for Renewable Energy Technology. MDPI AG.

- Vyas, D., & Gupta, R. K. (2020). *Bio-hydrogen Energy and Sustainable Development*. New Delhi: Daya Publishing House.
- Azad, K. A., & Sharma, S. (Eds.) (2016). *Clean Energy for Sustainable Development: Comparisons and Contrasts of New Approaches*. Academic Press.
- Kumar. J, C. R., & Majid, M. A. (2020). Renewable energy for sustainable development in India: current status, future prospects, challenges, employment, and investment opportunities. *Energy, Sustainability and Society*, *10*, 2. https://doi.org/10.1186/s13705-019-0232-1.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Dr. Gopal Sarangi

Course Reviewers

1. Prof. Atul Kumar, Professor of Energy Studies Programme, School of International Studies, Jawaharlal Nehru University, New Delhi, India.
2. Dr Arunabha Ghosh, Public Policy Expert & CEO, Council on Energy, Environment and Water (CEEW), New Delhi, India.

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Digital Economy: Dividends, Disputes & Dimensions

Course code: PPS 156	**No. of credits:** 2	**L-T-P:** 22-08-00	**Learning hours:** 30

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Dr. Gaurika Chugh	**Course instructor(s):** Dr. Gaurika Chugh, Ms. Jaya Verma Sinha & Others

Contact details: gaurika.chugh@terisas.ac.in

Course type: Core	**Course offered in:** 2nd Semester

Course description

The digital economy is a major driver of economic growth in recent times, contributing to productivity gains, job creation, and innovation. It generates vast amounts of data that can be leveraged for evidence-based policy formulation. The digital economy enables improved governance through e-governance systems that enhance service delivery, increase transparency, and facilitate citizen engagement. Understanding the digital economy is also crucial for promoting sustainable industrial practices, digital transformation in energy management, and resource efficiency. Public policy students must understand these trends to effectively engage in economic planning and other development initiatives.

This course is designed to explore the multifaceted landscape of the digital economy, examining the benefits, challenges, and complexities associated with its rapid integration into various aspects of society, commerce and governance. Providing an understanding of the implications of digital transformation, this course combines theoretical concepts with practical insights, fostering a comprehensive understanding of the digital economy's impact on individuals, businesses, and governments.

This course is divided into four modules. The first module provides a foundational understanding of the digital economy, exploring key concepts, components, and the significance of digital technologies in modern trading and economic paradigms. The second module explores disputes, policy and governance challenges that arise within the digital economy, emphasizing regulatory frameworks and ethical considerations. The third module examines future trends and opportunities within the digital economy, exploring the innovations that are shaping its trajectory. The final module presents in-depth case studies to illustrate practical applications of digital economy concepts in various sectors, analysing successful integrations and lessons learned.

Learning objectives:

- To help students understand the fundamental principles and dynamics of the digital economy and analyze the economic benefits and potential drawbacks of digital transformation.
- To orient students to disputes arising from digital business practices and the governance challenges they present.
- To discuss emerging technologies and evaluate future prospects and trends shaping the digital economy.
- To assist students to examine real-world case studies to understand practical implications and integration of digital economy strategies.

Course content

Module	Topic	L	T	P
1.	**Introduction to Digital Economy** • Overview of digital economy and its components (e.g., e-commerce, digital services, fintech) • Evolution of digital technologies and their impact on global economies • Exploration of economic benefits: productivity, efficiency, and innovation. • Data as an Economic Asset: The role of big data and analytics in driving economic growth; Understanding data ownership, usage, management, and commercialization • Overview of how different government departments and ministries are adapting to the digital economy. • Importance of digital infrastructure: broadband, cloud computing, and IoT. • Global disparities in digital connectivity and its economic implications.	8	0	0

2.	**Digital Economy: Disputes, Policy & Governance Challenges** • Overview of existing laws and regulations governing the digital economy in India • Data privacy, intellectual property rights, and security concerns • Challenges in effective governance and enforcement; Challenges posed by bureaucratic processes and compliance issues for businesses • Cybersecurity and Ethical Considerations: Understanding cybersecurity threats and their impact on the digital economy; Ethical dilemmas surrounding data collection, usage, artificial intelligence and surveillance in the digital economy • Digital divide and its effects on socioeconomic disparities; Strategies for promoting inclusivity and access to digital resources • Challenges posed by foreign digital platforms and large tech companies; Global competition and its effects on local industries in the digital economy • Impact of automation and digital technologies on employment in various sectors; Skill gaps and workforce readiness for the digital economy	8	0	0
3.	**Prospects for Digital Economy** • Global Market Access: E-commerce Expansion; Digital Trade • Increased Consumer Connectivity and Engagement: Personalized Services; Improved Customer Experience • Financial Inclusion and FinTech Innovations: Access to Financial Services; Rise of FinTech • Smart Infrastructure and Urban Development: Smart Cities; Investment in digital infrastructure • Data-Driven Decision Making: Enhanced Analytics; Agility and Responsiveness • Environmental Sustainability: Resource Optimization; Reduction in Physical Footprint • Exploration of emerging technologies: blockchain, AI, and their potential impacts on the economy. • Predictions and challenges for the future of the digital economy	6	0	0
4.	**Case Studies on Digital Economy Integration** • International Cases, such as, Estonia: Digital Society and E-Government; China: E-Commerce and Mobile Payments, largely driven by platforms like Alibaba and Tencent; South Korea: Broadband and Internet Connectivity; Singapore: Smart Nation Initiative; Finland: Education and Digital Competency • Indian Cases, such as, Aadhaar and Digital Identification; Unified Payments Interface (UPI); E-Governance and Digital Services; M-Kisan: Mobile-Based Agricultural Extension; E-commerce Expansion (e.g., through Flipkart, Amazon India, Snapdeal etc.); Telemedicine and Digital Health (National Digital Health Mission (NDHM)); Startup Ecosystem and Innovation (in sectors like Fintech, Edtech, Healthtech, and Agritech)	0	8	0
	Total	**22**	**8**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (30%)
- **Minor Test-2:** Case Study Presentation on select cases based on Module-4 (20%)
- **Major Test:** Written Test/Term Paper Submission & Presentation (50%)

Learning outcomes

Upon completion of this course, candidates would be:

1. having a comprehensive understanding of the complexities and opportunities within the digital economy (All evaluations)
2. well-equipped to engage with current trends in the digital landscape and contribute meaningfully to discussions and decision-making processes surrounding the future of the digital economy (All evaluations)

Pedagogical approach
Classroom lectures; Student Seminars; Invited talks from Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

Module 1:

- Tapscott, D. (1997). *The Digital Economy: Promise and Peril in The Age of Networked Intelligence*. McGraw-Hill Education.
- Lynn, T., Rosati, P., Conway, E., Curran, D., Fox, G., & O'Gorman, C. (2022). The Digital Economy and Digital Business. In: *Digital Towns*. Cham: Palgrave Macmillan. https://doi.org/10.1007/978-3-030-91247-5_4.
- Letiagina, E. N., Trifonov, Y. V., Vizgunov, A. N., Tanchuk, R. S., & Brykalov, S. M. (2022). Digital Economy: Research, Approaches, and Development Strategies. In: Popkova, E.G. (eds.) *Business 4.0 as a Subject of the Digital Economy. Advances in Science, Technology & Innovation*. Cham: Springer. https://doi.org/10.1007/978-3-030-90324-4_140.
- Nosova, S., Norkina, A., Makar, S., & Fadeicheva, G. (2020). Digital transformation as a new paradigm of economic policy. *Procedia Computer Science*, *190*, 657-665. https://doi.org/10.1016/j.procs.2021.06.077.
- Tretyakov O. V. (2022). *Digital Economy as a new Development Paradigm: Opportunities, Challenges and Prospects*. Melbourne: AUS Publishers. https://auspublishers.com.au/en/nauka/monography/2406/view.
- Kalf, W. (2024). Economic Development in the Digital Economy: A Bibliometric Review. *Economies*, *12*(3), 53. https://doi.org/10.3390/economies12030053.

Module 2:

- Lynn, T., Rosati, P., Conway, E., Curran, D., Fox, G., & O'Gorman, C. (2022). *Infrastructure for Digital Connectivity. In: Digital Tow*ns. Cham: Palgrave Macmillan. https://doi.org/10.1007/978-3-030-91247-5_6.
- Valdez, V.B., Javier, S.P. (2021). Digital Divide: From a Peripheral to a Core Issue for All SDGs. In W. Leal Filho, A. Marisa Azul, L. Brandli, A. Lange Salvia, P. Gökçin Özuyar, T. Wall (Eds.) *Reduced Inequalities. Encyclopedia of the UN Sustainable Development Goals*. Cham: Springer. https://doi.org/10.1007/978-3-319-95882-8_107.
- Heeks, R. (2022). Digital inequality beyond the digital divide: conceptualizing adverse digital incorporation in the global South. *Information Technology for Development*, *28*(4), 688–704. https://doi.org/10.1080/02681102.2022.2068492.
- Baporikar, N. (2024). Barriers and Impact of the Digital Economy. In P. Ordóñez de Pablos, M. Almunawar, & M. Anshari (Eds.), *Strengthening Sustainable Digitalization of Asian Economy and Society* (pp. 38-53). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-1942-0.ch003
- Graham, M. (Ed.) (2019). Digital Economies at Global Margins. The MIT Press. https://doi.org/10.7551/mitpress/10890.001.0001.
- ITU (2017). Social and Economic Impact of Deigital Transformation on the Economy. GSR-17 Discussion Paper. https://www.itu.int/en/ITU-D/Conferences/GSR/Documents/GSR2017/Soc_Eco_impact_Digital_transformation_finalGSR.pdf.
- Friederici, N. (2019). The Global Digital Economy: Worsening Inequality vs. Pockets of Innovation. https://www.orfonline.org/expert-speak/the-global-digital-economy-worsening-inequality-vs-pockets-of-innovation-54180.
- Morris, J., Morris, W., & Bowen, R. (2021). Implications of the digital divide on rural SME resilience. *Journal of Rural Studies*, *89*, 369-377. https://doi.org/10.1016/j.jrurstud.2022.01.005.
- Mukherjee, A. (2024). Navigating the Digital Divide in a Hyper connected World: Strategies for Bridging Inequalities and Promoting Equitable Access to Digital Opportunities. *International Research Journal of Engineering and Technology (IRJET)*, *11*(2), 360-369. https://www.irjet.net/archives/V11/i2/IRJET-V11I261.pdf
- Laskar, M. H. (2023). Examining the emergence of digital society and the digital divide in India: A comparative evaluation between urban and rural areas. *Frontiers in Sociology*, *8*, 1145221. https://doi.org/10.3389/fsoc.2023.1145221.

- Xiao, A., Xu, Z., Skare, M., Qin, Y., & Wang, X. (2024). Bridging the digital divide: The impact of technological innovation on income inequality and human interactions. *Humanities and Social Sciences Communications*, *11*(1), 1-18. https://doi.org/10.1057/s41599-024-03307-8.
- Dewani, N. D., Khan, Z. A., Agarwal, A., Sharma, M., & Khan, S. A. (Eds.). (2022). *Handbook of Research on Cyber Law, Data Protection, and Privacy*. IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-7998-8641-9.
- Nimmer, R., & Towle, H. K. (2013). *Data Privacy, Protection, and Security Law*. LexisNexis.
- Christen, M., Gordijn, B., & Loi, M. (Eds.) (2020). *The Ethics of Cybersecurity*. Cham: Springer. https://link.springer.com/book/10.1007/978-3-030-29053-5.
- Macnish, K., & Van der Ham, J. (2020). Ethics in cybersecurity research and practice. *Technology in Society*, *63*, 101382. https://doi.org/10.1016/j.techsoc.2020.101382.
- Priyadarshini, I., & Cotton, C. (2022). *Cybersecurity: Ethics, Legal, Risks, and Policies*. Apple Academic Press, Inc.

Module 3:

- Kumar, S., Lim, W.M., Sivarajah, U., & Kaur, J. (2023). Artificial Intelligence and Blockchain Integration in Business: Trends from a Bibliometric-Content Analysis. *Information Systems Frontiers*, *25*, 871–896. https://doi.org/10.1007/s10796-022-10279-0.
- Hong, Z., & Xiao, K. (2024). Digital economy structuring for sustainable development: The role of blockchain and artificial intelligence in improving supply chain and reducing negative environmental impacts. *Scientific Reports*, *14*(1), 1-12. https://doi.org/10.1038/s41598-024-53760-3.
- Charles, V., Emrouznejad, A. & Gherman, T. (2023). A critical analysis of the integration of blockchain and artificial intelligence for supply chain. *Annals of Operations Research*, *327*, 7–47. https://doi.org/10.1007/s10479-023-05169-w.
- Bhumichai, D., Smiliotopoulos, C., Benton, R., Kambourakis, G., & Damopoulos, D. (2024). The Convergence of Artificial Intelligence and Blockchain: The State of Play and the Road Ahead. *Information*, *15*(5), 268. https://doi.org/10.3390/info15050268.
- Gupta, S., Modgil, S., Choi, T., Kumar, A., & Antony, J. (2023). Influences of artificial intelligence and blockchain technology on financial resilience of supply chains. *International Journal of Production Economics*, *261*, 108868. https://doi.org/10.1016/j.ijpe.2023.108868.
- Huria, A. (2019). Facilitating Trade and Logistics for ECommerce: Building Blocks, Challenges and Ways Forward. The World Bank. https://documents1.worldbank.org/curated/es/645791578285992456/pdf/Facilitating-Trade-and-Logistics-for-E-Commerce-Building-Blocks-Challenges-and-Ways-Forward.pdf.
- Jaller, L. D., Gaillard, S., & Molinuevo, M. (n.d.). The regulation of Digital Trade: Key policies and international trends. World Bank Group. https://documents1.worldbank.org/curated/en/998881578289921641/pdf/The-Regulation-of-Digital-Trade-Key-Policies-and-International-Trends.pdf.
- Tolstoy, D., Melén Hånell, S., & Özbek, N. (2022). Effectual market creation in the cross-border e-commerce of small-and medium-sized enterprises. *International Small Business Journal*. https://doi.org/10.1177_02662426211072999.
- Ahi, A. A., Sinkovics, N., & Sinkovics, R. R. (2023). E-commerce Policy and the Global Economy: A Path to More Inclusive Development?. *Management International Review*, *63*, 27–56. https://doi.org/10.1007/s11575-022-00490-1.
- Meyer, K. E., Li, J., Brouthers, K. D., & Jean, R. (2023). International business in the digital age: Global strategies in a world of national institutions. *Journal of International Business Studies*, *54*, 577–598. https://doi.org/10.1057/s41267-023-00618-x
- Janow, M. E., & Mavroidis, P. C. (2019). Digital Trade, E-Commerce, the WTO and Regional Frameworks. *World Trade Review*, *18*(S1), S1–S7. https://doi.org/10.1017/S1474745618000526.
- Sharma, V., Gupta, M., Arora, N., & Shaikh, A. A. (Eds.) (2025). *FinTech and Financial Inclusion: Leveraging Digital Finance for Economic Empowerment and Sustainable Growth*. London & New York: Routledge.
- Asif, M., Khan, M. N., Tiwari, S., Wani, S. K., & Alam, F. (2023). The Impact of Fintech and Digital Financial Services on Financial Inclusion in India. *Journal of Risk and Financial Management*, *16*(2), 122. https://doi.org/10.3390/jrfm16020122.
- Amnas, M. B., Selvam, M., & Parayitam, S. (2024). FinTech and Financial Inclusion: Exploring the Mediating Role of Digital Financial Literacy and the Moderating Influence of Perceived

Regulatory Support. *Journal of Risk and Financial Management*, *17*(3), 108. https://doi.org/10.3390/jrfm17030108.

- Shukla, S., & Gupta, K. (Eds.) (2019). *Futue of FinTech: Innovative Business Model for Financial Inclusion*. New Delhi: Book Bazooka Publication.
- Mhlanga, D. (2024). *FinTech, Financial Inclusion, and Sustainable Development: Disruption, Innovation, and Growth*. Oxon & New York: Routledge.
- Malik, S. (2023). Data-Driven Decision-Making: Leveraging the IoT for Real-Time Sustainability in Organizational Behavior. *Sustainability*, *16*(15), 6302. https://doi.org/10.3390/su16156302.
- Szukits, Á. (2022). The illusion of data-driven decision making – The mediating effect of digital orientation and controllers' added value in explaining organizational implications of advanced analytics. *Journal of Management Control*, *33*, 403–446. https://doi.org/10.1007/s00187-022-00343-w.
- Ali Al-Darras, O. M., & Tanova, C. (2022). From Big Data Analytics to Organizational Agility: What Is the Mechanism? *SAGE Open*. https://doi.org/10.1177/21582440221106170.
- Chatfield, A. T., & Reddick, C. G. (2018). Customer agility and responsiveness through big data analytics for public value creation: A case study of Houston 311 on-demand services. *Government Information Quarterly*, *35*(2), 336-347. https://doi.org/10.1016/j.giq.2017.11.002.
- Xia, L., Baghaie, S., & Mohammad Sajadi, S. (2024). The digital economy: Challenges and opportunities in the new era of technology and electronic communications. *Ain Shams Engineering Journal*, *15*(2), 102411. https://doi.org/10.1016/j.asej.2023.102411.
- Rosário, A. T., & Dias, J. C. (2022). The New Digital Economy and Sustainability: Challenges and Opportunities. *Sustainability*, *15*(14), 10902. https://doi.org/10.3390/su151410902.
- Güldenberg, S., Ernst, E., & North, K. (Eds.) (2021). *Managing Work in the Digital Economy: Challenges, Strategies and Practices for the Next Decade*. Cham, Switzerland: Springer Nature Switzerland AG.
- Almunawar, M. N., Islam, M. Z., & de Pablos, P. O. (2022). *Digital Transformation Management: Challenges and Futures in the Asian Digital Economy*. Oxon & New York: Routledge.
- Dridi, A., & Telmoudi, F. (2025). Digital Economy and Digital Maturity: A Comprehensive Review. In M. A. Bach Tobji, R. Jallouli, H. Sadok, K. Lajfari, D. Mafamane, & H. Mahboub (eds). *Digital Economy. Emerging Technologies and Business Innovation*. ICDEc 2024. Lecture Notes in Business Information Processing, vol 530. Cham: Springer. https://doi.org/10.1007/978-3-031-76365-6_5.

Module 4:

- Hardy, A. (2024). Estonia's digital diplomacy: Nordic interoperability and the challenges of cross-border e-governance. *Internet Policy Review*, *13*(3). https://doi.org/10.14763/2024.3.1785
- Stephany, F. (2018). It is not only size that matters: How unique is the Estonian e-governance success story? Agenda Austria Working Paper, No. 15, Agenda Austria, Wien. https://www.econstor.eu/bitstream/10419/191730/1/1048218333.pdf.
- Zhao, C., Wu, Y., & Guo, J. (2022). Mobile payment and Chinese rural household consumption. *China Economic Review*, *71*, 101719. https://doi.org/10.1016/j.chieco.2021.101719.
- Vatsa, P., Ma, W., & Zheng, H. (2024). Mobile payment adoption in China: Do demographic and socioeconomic factors matter? *Managerial and Decision Economics*, *45*(3), 1428-1434. https://doi.org/10.1002/mde.4086.
- Seung-Bum, H., Ina, U., & Ming, C. (2021). Consumer adoption of offline m-payment: The Chinese case. Global Business & Finance Review (GBFR), People & Global Business Association (P&GBA), *Seoul*, *26*(2), 83-109. https://doi.org/10.17549/gbfr.2021.26.2.83.
- Liu, J., Li, Z., & Hu, X. (2023). A Study of the Impact of Mobile Payment on the Enhancement of Consumption Structure and Pattern of Chinese Rural Households. *Agriculture*, *13*(11), 2082. https://doi.org/10.3390/agriculture13112082.
- Abrahim Sleiman, K. A., Juanli, L., Lei, H. Z., Rong, W., Yubo, W., Li, S., Cheng, J., & Amin, F. (2023). Factors that impacted mobile-payment adoption in China during the COVID-19 pandemic. *Heliyon*, *9*(5), e16197. https://doi.org/10.1016/j.heliyon.2023.e16197.
- Park, S., & Yoon, S. (2005). Separating early-adopters from the majority: The case of Broadband Internet access in Korea. *Technological Forecasting and Social Change*, *72*(3), 301-325. https://doi.org/10.1016/j.techfore.2004.08.013.

- Lee, H., Jeong, S., & Lee, K. (2023). The South Korean case of deploying rural broadband via fiber networks by implementing universal service obligation and public-private partnership based project. *Telecommunications Policy*, *47*(3), 102506. https://doi.org/10.1016/j.telpol.2023.102506.
- Siu Loon, H. (2016). Defining a smart nation: The case of Singapore. *Journal of Information, Communication and Ethics in Society, 14*(4), 323-333. https://ink.library.smu.edu.sg/sis_research/5158
- Jie, W. J. (2017). Singapore's Smart Nation Initiative - A Policy and Organisational Perspective : 1-12. ScholarBank@NUS Repository. https://doi.org/10.25818/vjdp-1gqf
- Cavada, M., Tight, M. R., & Rogers, C. D. (2018). A smart city case study of Singapore—Is Singapore truly smart? *Smart City Emergence*, 295-314. https://doi.org/10.1016/B978-0-12-816169-2.00014-6.
- Lähdemäki, J. (2019). Case Study: The Finnish National Curriculum 2016—A Co-created National Education Policy. In J. W. Cook (eds) *Sustainability, Human Well-Being, and the Future of Education*. Cham: Palgrave Macmillan. https://doi.org/10.1007/978-3-319-78580-6_13.
- Salmela-Aro, K., & Lavonen, J. (2024). The Switch to Distance Teaching and Learning in Finland During the COVID-19 Pandemic (2020–2022) Went Technically Well but Was Emotionally Challenging. In F. M. Reimers (eds) *Schools and Society During the COVID-19 Pandemic*. Cham: Springer. https://doi.org/10.1007/978-3-031-42671-1_4.
- Záhorec, J., Hašková, A., Poliaková, A., & Munk, M. (2020). Case Study of the Integration of Digital Competencies into Teacher Preparation. *Sustainability*, *13*(11), 6402. https://doi.org/10.3390/su13116402
- Kaarakainen, T., & Saikkonen, L. (2021). Multilevel analysis of the educational use of technology: Quantity and versatility of digital technology usage in Finnish basic education schools. *Journal of Computer Assisted Learning*, *37*(4), 953-965. https://doi.org/10.1111/jcal.12534
- Mir, U. B., Kar, A. K., Gupta, M. P., & Sharma, R. S. (2019). Prioritizing Digital Identity Goals – The Case Study of Aadhaar in India. In I. O. Pappas, P. Mikalef, Y. K. Dwivedi, L. Jaccheri, J. Krogstie, & M. Mäntymäki (Eds.) *Digital Transformation for a Sustainable Society in the 21st Century*. I3E 2019. Lecture Notes in Computer Science, vol 11701. Cham: Springer. https://doi.org/10.1007/978-3-030-29374-1_40.
- MC, A., & Shanmugam, K. (2023). Implementing unique identification technology: The journey and success story of Aadhaar in India. *Journal of Information Technology Teaching Cases*. https://doi.org/10.1177_20438869231200286.
- Mir, U. B., Kar, A. K., Dwivedi, Y. K., Gupta, M., & Sharma, R. (2020). Realizing digital identity in government: Prioritizing design and implementation objectives for Aadhaar in India. *Government Information Quarterly*, *37*(2), 101442. https://doi.org/10.1016/j.giq.2019.101442.
- Banerjee, S. (2016). Aadhaar: Digital Inclusion and Public Services in India. World Development Report 2016, Background Paper (Digital Dividends). https://thedocs.worldbank.org/en/doc/655801461250682317-0050022016/original/WDR16BPAadhaarPaperBanerjee.pdf.
- Mittal, S., & Hariharan, V. K. (2017). Mobile-based climate services impact on farmers risk management ability in India. *Climate Risk Management*, *22*, 42-51. https://doi.org/10.1016/j.crm.2018.08.003.
- Kansiime, M. K., Alawy, A., Allen, C., Subharwal, M., Jadhav, A., & Parr, M. (2019). Effectiveness of mobile agri-advisory service extension model: Evidence from Direct2Farm program in India. *World Development Perspectives*, *13*, 25-33. https://doi.org/10.1016/j.wdp.2019.02.007.
- Sivakumar, S., Bijoshkumar, G., Rajasekharan, A., Panicker, V., Paramasivam, S., Manivasagam, V. S., & Manalil, S. (2022). Evaluating the Expediency of Smartphone Applications for Indian Farmers and Other Stakeholders. *AgriEngineering*, *4*(3), 656-673. https://doi.org/10.3390/agriengineering4030042.
- Jain, D. (2023). Regulation of Digital Healthcare in India: Ethical and Legal Challenges. *Healthcare*, *11*(6), 911. https://doi.org/10.3390/healthcare11060911.
- Poonam, & Saini, S. K. (2024). Study on E-Commerce Growth and Impact on Indian Economic Development. Research Review International Journal of Multidisciplinary, 9(8), 57–64. https://doi.org/10.31305/rrijm.2024.v09.n08.007
- National Institute of Agricultural Extension Management (MANAGE) (2019). Agritech Startups: The Ray of Hope in Indian Agriculture. Discussion Paper 10. MANAGE-Centre for Agricultural Extension Innovations, Reforms, and Agripreneurship (CAEIRA).

https://www.manage.gov.in/publications/discussion%20papers/MANAGE-Discussion%20Paper-10.pdf.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Dr. Chandan Kumar

Course reviewers

1. Dr. Rajiv Kumar, Former Vice-Chairman, NITI Aayog, Govt. of India; Chairman of the Current Board of Governors of the Giri Institute of Development Studies (GIDS), Lucknow, Uttar Pradesh, India.
2. Prof. S. P. Singh, Professor, Department of Humanities & Social Sciences, Indian Institute of Technology Roorkee (IITR), Roorkee, Uttarakhand, India.

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Infrastructure Development and Sustainability: Issues & Policy Perspectives

Course code: PPS 157	**No. of credits:** 2	**L-T-P:** 22-08-00	**Learning hours:** 30

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Mr. Shri Prakash	**Course instructor(s):** Mr. Shri Prakash

Contact details: shri.prakash@terisas.ac.in

Course type: Core	**Course offered in:** 2nd Semester

Course description

Transportation, energy and telecommunications infrastructure are essential for effective functioning and growth across various sectors in an economy. Together, they facilitate commerce, enhance connectivity, enable communication, and play a critical role in promoting sustainability and development. The integration of sustainability into infrastructure planning and implementation is crucial for addressing the environmental, social, and economic challenges associated with rapid urbanization, climate change, and resource depletion.

This course examines the critical relationship between infrastructure development and sustainability, focusing on how policies and practices can address contemporary infrastructure challenges while promoting environmental stewardship, social equity, and economic viability. Students will engage with various issues related to infrastructure and explore policy frameworks designed to create sustainable infrastructure solutions.

This course is divided into four modules. The first module introduces the fundamental concepts of infrastructure development, covering its importance in economic growth, social equity, and environmental management. Focusing on the principles of sustainability, the second module examines how infrastructure development can incorporate environmental, social, and economic considerations. It covers sustainable design practices, resource efficiency, climate resilience, and methodologies for assessing infrastructure sustainability. The third module analyses the policy landscapes and regulatory frameworks that govern infrastructure development. It covers key policies at international, national, and local levels, focusing on their implications for sustainability. In the final module, students will examine recent and relevant real-world examples of innovative infrastructure projects that successfully integrate sustainability principles. Through international and Indian case studies, participants will analyse different initiatives, focusing on their design, execution, outcomes, and lessons learned. The module encourages critical thinking about how innovative practices can be scaled and replicated, addressing current industry challenges and contributing to a sustainable future in infrastructure development.

Learning objectives:

- To orient students on the fundamentals of infrastructure development and its role in economic growth and sustainable development, analyzing the interplay between infrastructure, sustainability, and public policy.
- To help students identify and assess the challenges associated with traditional infrastructure development practices.
- To explore and discuss regulatory frameworks and innovative strategies for promoting sustainable infrastructure solutions.
- To assist students to examine case studies to inform discussions on best practices and lessons learned in infrastructure sustainability.

Course content

Module	Topic	L	T	P
1.	**Introduction to Infrastructure Development Issues** • Role of Basic Infrastructure (Transportation, Energy and Telecommunication) in economic development and quality of life. • Changing demands for infrastructure in light of urban growth, climate change, and globalization. • Overview of historical trends and recent patterns in the development of basic infrastructures in India: Transportation (e.g., Roads & Highways, Railways, Shipping, Aviation); Energy (e.g., Power Plants, Transmission Lines, Distribution Networks, Renewable Energy Installations); Telecommunication (e.g., Mobile Networks, Broadband Networks, Data Centers)	10	0	0

	• Challenges of infrastructure development in India: Funding, Land acquisition, Land laws, Public Private Participation, Role of multilateral and bilateral agencies			
2.	**Sustainability in Infrastructure** • Importance of integrating sustainability considerations into infrastructure development. • Introduction to smart technologies and their role in sustainable infrastructure. • Assessing the environmental repercussions of infrastructure projects • Evaluating social equity and community impacts associated with infrastructure development.	6	0	0
3.	**Policy Frameworks and Regulatory Challenges** • Assessment of international, national and state or local-level policies aimed at promoting sustainable infrastructure. • Policy perspectives on sustainable transportation systems. • Innovations in renewable energy and their potential for infrastructure development. • Sustainable practices within the telecommunication sector • Overview of funding mechanisms, incentives, and public-private partnerships. • Understanding regulatory frameworks governing infrastructure projects (e.g., Environmental Impact Assessment). • Navigating compliance challenges and enforcing environmental regulations.	8	0	0
4.	**Case Studies of Innovative Practices & Initiatives** • International Cases, such as, Copenhagen, Denmark: Cycling Infrastructure and Policy; Portland, Oregon, USA: Integrated Transit System; Singapore: Integrated Public Transportation System; Curitiba, Brazil: Bus Rapid Transit (BRT) System; Los Angeles, California, USA: Sustainable Transportation Initiatives; Ottawa, Canada: Light Rail Transit (LRT) Implementation; Sweden: Eco-Friendly Mobile Network Deployment; Canada: Broadband Infrastructure Expansion; Netherlands: 5G Implementation for Sustainable Development; United Kingdom: National Health Service (NHS) Digital Transformation • Indian Cases, such as, Bengaluru: *Namma* Metro Project; Delhi: The Bus Rapid Transit System (BRT); Mumbai: Mumbai Local Train Network and the Suburban Rail Plan; Pune: Smart City Mobility Initiatives; Ahmedabad: *Janmarg* Bus Rapid Transit System (BRTS); Kerala: Sustainable Urban Transport Project (KSTP); Airtel's Green Initiatives; BSNL's Rural Connectivity Projects; Telecom Regulatory Authority of India (TRAI) Initiatives; Telecom and Disaster Management Initiatives	0	6	0
	Total	**24**	**6**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (30%)
- **Minor Test-2:** Case Study Presentation on select cases based on Module-4 (20%)
- **Major Test:** Written Test/Term Paper Submission & Presentation (50%)

Learning outcomes

Upon completion of this course, candidates will be:

1. having a comprehensive understanding of the challenges and opportunities in integrating sustainability into infrastructure development (All evaluations)
2. equipped with the knowledge and skills necessary to advocate for and implement sustainable infrastructure solutions in their future careers (All evaluations)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Experts in particular domains including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

Module 1:

- Babu, A., & Gupta, V. S. N. (2023). *Sustainable Infrastructure: Challenges and Opportunities*. Allied Publishers Pvt. Ltd.
- Indira, A., & Chandrasekaran, N. (2023). Infrastructure development in India: a systematic review. *Letters in Spatial and Resource Sciences*, *16*, 35. https://doi.org/10.1007/s12076-023-00357-5
- The Economist Intelligence Unit Limited (2019). The Critical Role of Infrastructure for the Sustainable Development Goals. https://content.unops.org/publications/The-critical-role-of-infrastructure-for-the-SDGs_EN.pdf.
- Popescu, C. R., Yu, P., & Wei, Y. (Eds.). (2023). Achieving the Sustainable Development Goals Through Infrastructure Development. IGI Global. https://doi.org/10.4018/979-8-3693-0794-6.
- Ascher, W., & Krupp, C. (2010). *Physical Infrastructure Development Balancing the Growth, Equity, and Environmental Imperatives*. New York: Palgrave Macmillan.

Module 2:

- Fenner, R. A., Sykes, J., & Ainger, C. (2022). *Sustainable Infrastructure: Principles into Practice*. Emerald Publishing Ltd.
- Eisinger Balassa, B., Nagy, N. G., & Gyurián, N. (2024). Perception and social acceptance of 5G technology for sustainability development. *Journal of Cleaner Production*, *467*, 142964. https://doi.org/10.1016/j.jclepro.2024.142964.
- Rastvortseva, S., & Kameneva, E. (2024). Development of national specialization in 5G technologies within the European Union. *Journal of Economic Structures*, *13*(1), 1-21. https://doi.org/10.1186/s40008-024-00334-1.
- Marabissi, D., Mucchi, L., Fantacci, R., Spada, M. R., Massimiani, F., Fratini, A., Cau, G., Yunpeng, J., & Fedele, L. (2018). A Real Case of Implementation of the Future 5G City. *Future Internet*, *11*(1), 4. https://doi.org/10.3390/fi11010004.
- Goel, R., & Tiwari, G. (2014). Promoting Low Carbon Transport in India: Case Study on Metro Rails in Indian Cities. https://unepccc.org/wp-content/uploads/2014/08/case-study-of-metro-final.pdf.
- Vijayalakshmi, S., & Raj, K. (2020). Sustainable Urban Transport Indicators: Case of Mega Cities of India. *SDMIMD Journal of Management*, *10*(2), 27–46. https://doi.org/10.18311/sdmimd/2019/24142.

Module 3:

- OECD (2015). Towards a Framework for the Governance of Infrastructure. Public Governance and Territorial Development, Directorate Public Governance Committee Report. https://ppp.worldbank.org/public-private-partnership/sites/default/files/2022-03/Towards-a-Framework-for-the-Governance-of-Infrastructure.pdf.
- Mehta, P. S., & CUTS Institute for Regulation & Competition. (2009). *Developing infrastructure through an ideal regulatory framework*. CUTS Institute for Regulation & Competition. https://catalogtest.lib.uchicago.edu/vufind/Record/8915079.
- Mani, N. (2012). *Infrastructure development and financing in India: An exhaustive analytical account of various policies and programmes for development of infrastructure in India, covering the following areas ...* New Century Publications. https://catalogtest.lib.uchicago.edu/vufind/Record/9291171.
- IC Centre for Governance. (2013). *"Governance issues in infrastructure development": Lecture series, September 2012-February 2013*. IC Centre for Governance. https://catalogtest.lib.uchicago.edu/vufind/Record/10361588.
- Satyanarayana, G., & Madhusudana, H. S. (2017). *Infrastructure development and the role of Public-Private-Partnership (PPP): An exhaustive, descriptive and analytical account of policies and programmes for the development and upgradation of infrastructure in India*. New Century Publications. https://catalogtest.lib.uchicago.edu/vufind/Record/11667974.
- Mehta, P. S., & CUTS Centre for Competition, I. &. E. R. (2010). *Comparative study of regulatory framework in infrastructure sector: Lessons for India*. CUTS Centre for Competition, Investment & Economic Regulation. https://catalogtest.lib.uchicago.edu/vufind/Record/8602829.

- Haldea, G. (2011). *Infrastructure at crossroads: The challenges of governance*. Oxford University Press. https://catalogtest.lib.uchicago.edu/vufind/Record/8854091.
- CUTS Institute for Regulation & Competition. (2005). *Regulatory Framework for Infrastructure Sector in India*. Seminar Report. CUTS Institute for Regulation & Competition. https://cuts-ccier.org/wp-content/uploads/2019/01/Regulatory_Framework_for_Infrastructure_Sector_in_India.pdf.

Module 4:

- Emanuel, M. (2019). Making a bicycle city: infrastructure and cycling in Copenhagen since 1880. *Urban History*, *46*(3), 493–517. https://doi.org/10.1017/S0963926818000573.
- Gössling, S. (2013). Urban transport transitions: Copenhagen, City of Cyclists. *Journal of Transport Geography*, *33*, 196-206. https://doi.org/10.1016/j.jtrangeo.2013.10.013.
- Oh, S., & Wang, X. (2018). Urban Rail Transit Provides the Necessary Access to a Metropolitan Area: A Case Study of Portland, Oregon, USA. *Urban Rail Transit*, *4*, 234–248. https://doi.org/10.1007/s40864-018-0095-3.
- K. Luk, J. Y., & Yang, C. (2001). Impact of ITS measures on public transport: A Case study. *Journal of Advanced Transportation*, *35*(3), 305-320. https://doi.org/10.1002/atr.5670350308.
- Ibrahim, M. F. (2003). Improvements and integration of a public transport system: The case of Singapore. *Cities*, *20*(3), 205-216. https://doi.org/10.1016/S0264-2751(03)00014-3.
- Manifesty, O. R., & Park, J. Y. (2022). A Case Study of a 15-Minute City Concept in Singapore's 2040 Land Transport Master Plan: 20-Minute Towns and a 45-Minute City. *International Journal of Sustainable Transportation Technology*, *5*(1), 1-11. https://unijourn.com/upload/doc/submission/articleFile-1637923321026-main.pdf.
- Varela, E. N., Öhrling, K., & Moscati, A. (2021). Analysis of the Challenges in the Swedish Urban Planning Process: A Case Study about Digitalization. *Sustainability*, *14*(24), 16333. https://doi.org/10.3390/su142416333.
- Rajabiun, R., & Middleton, C. A. (2013). Multilevel governance and broadband infrastructure development: Evidence from Canada. *Telecommunications Policy*, *37*(9), 702-714. https://doi.org/10.1016/j.telpol.2013.05.001.
- Rajabiun, R. (2019). Technological change, civic engagement and policy legitimization: Perspectives from the rise of broadband Internet as an essential utility in Canada. *Government Information Quarterly*, *37*(1), 101403. https://doi.org/10.1016/j.giq.2019.101403.
- Hallstrom, L. K., Heinrich, A., & Pearson, M. (2017). Beyond Infrastructure: Strategies to Support Adoption and Realize Benefits of Broadband in Rural Canada. ACSRC Report Series # 49-17. https://www.ualberta.ca/en/alberta-centre-sustainable-rural-communities/media-library/reports/acsrc/no-49-17.pdf.
- Oughton, E. J., Frias, Z., Van der Gaast, S., & Van der Berg, R. (2019). Assessing the capacity, coverage and cost of 5G infrastructure strategies: Analysis of the Netherlands. *Telematics and Informatics*, *37*, 50-69. https://doi.org/10.1016/j.tele.2019.01.003.
- Hemasree, R., & Subramanian, C. V. (2022). Understanding the impacts and the influences of Metro rail on urban environment Case studies and the Bengaluru scenario. *ArXiv*. https://arxiv.org/abs/2209.14210.
- Mamillapalli, R. S., & Pusarla, H. R. (2023). Dreaming of profit: case of Bangalore Metro Rail Corporation Limited. *Emerald Emerging Markets Case Studies*, *13*(2), 1-12. https://www.emerald.com/insight/content/doi/10.1108/eemcs-08-2022-0281/full/html#case-tab.
- Sehgal, P. C., & Surayya, T. (2011). Innovative Strategic Management: The Case of Mumbai Suburban Railway System. *Vikalp*, 36(1), 61-72. https://journals.sagepub.com/doi/pdf/10.1177/0256090920110105.
- Agarwal, S., Mullick, A., & Ray, G. G. (2013). An Observational Study on Usability Issues in Mumbai Local Trains. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. https://doi.org/10.1177/1541931213571114.
- Shirke, C., Joshi, G., Kandala, V., & Arkatkar, S. (2016). "Transit Oriented Development and Its Impact on Level of Service of Roads & METRO: A Case Study of Mumbai Metro Line-I". *Transportation Research Procedia*, *25*, 3035-3054. https://doi.org/10.1016/j.trpro.2017.05.297.
- Islam, M. R., Brussel, M., Grigolon, A., & Munshi, T. (2018). Ridership and the Built-Form Indicators: A Study from Ahmedabad Janmarg Bus Rapid Transit System (BRTS). *Urban Science*, *2*(4), 95. https://doi.org/10.3390/urbansci2040095.

- Pathak, S., & Upadhyay, R. K. (2023). Macro level performance study of Ahmadabad bus rapid transit system: Janmarg. *Green Energy and Intelligent Transportation*, *2*(3), 100093. https://doi.org/10.1016/j.geits.2023.100093.
- Kumar, R., & Bose, P. (2022). Case Study Telecom industry and competitive landscape in India: will MTNL and BSNL successfully recover? *IIM Ranchi Journal of Management Studies*, 1(1), 82-98. https://www.emerald.com/insight/content/doi/10.1108/irjms-12-2021-0179/full/pdf.
- Kumar, N., & Singh, M. P. (2018). Telecom Regulatory Authority of India. *Indian Journal of Public Administration*. https://doi.org/10.1177/0019556118783097.
- Karonnon, P., & Rajeev, M. (2023). Policy Impacts on Indian Telecom Services Industry: Sales, Connectivity and Usages. ISEC Working Paper No. 563. https://www.isec.ac.in/wp-content/uploads/2024/04/WP-563-Prajeesh-and-Rajeev_Final.pdf.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Mr. Shri Prakash, and Dr. Chandan Kumar

Course Reviewers

1. Prof. D. K. Nauriyal, Professor, Department of Humanities & Social Sciences, Indian Institute of Technology Roorkee (IITR), Roorkee, Uttarakhand, India.
2. Mr Subodh Kumar Jain, Former Member, Infrastructure, Railway Board, Govt. of India.

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Climate Change and Development: Policies & Practices

Course code: PPS 159	**No. of credits:** 2	**L-T-P:** 24-06-00	**Learning hours:** 30

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Dr. Chandan Kumar	**Course instructor(s):** Prof. Shaleen Singhal, Mr. R. R. Rashmi

Contact details: chandan.kumar@terisas.ac.in

Course type: Core	**Course offered in:** 2nd Semester

Course description

This course provides a comprehensive exploration of climate change and its multifaceted developmental impacts. It is designed for understanding the interplay of climate science, political frameworks, and policy development while examining strategies for enhancing climate resilience. By offering an in-depth exploration of the interplay between climate change, development, and policymaking, it will equip students with the knowledge, skills, and perspectives to contribute positively to building resilient environments and settings. The insights gained through this course will empower the next generation of policymakers, urban planners, public health officials, and community leaders to create effective and sustainable responses to climate change.

This course is divided into four modules. The first module serves as a foundation for understanding climate change, exploring its scientific basis, causes, and global consequences. The module will also discuss global climate change agreements, equity in climate change, mitigation measures and risk assessment. In the second module, students will delve into politics, policies, key institutions, finance and technology transition surrounding climate change. The third module focuses on identifying and implementing strategies to build climate resilience in development planning. Students will explore various approaches and frameworks for assessing vulnerability and resilience, including green infrastructure, ecosystem-based and community-based approaches and initiatives aimed at mitigating the effects of climate change. In the final module, students will examine real-world case studies of places that have successfully implemented climate resilience strategies. Through collaborative analysis, students will identify key components that contributed to the success of these initiatives.

Learning objectives:

- To provide students with a nuanced understanding of the challenges posed by climate change, the political and policy contexts in which decisions are made.
- To orient students to the effective strategies that cities can employ to promote climate-resilience.
- To equip students with the skills necessary to contribute to climate action and sustainable urban development.

Course content

Module	Topic	L	T	P
1.	**Introduction to Climate Change** • Science of Climate Change (causes, effects, and projections): Mainstream view and Alternative view; The IPCC process and global assessments • International Climate Change Agreements: UNFCCC, Kyoto Protocol, Paris Agreement; India's engagement in Global Climate Negotiations • Equity in Climate Change: Approaches of developed and developing countries; Need for formal justification • Climate Change Mitigation: Sectors and Gases, Trends and Projections, GHG abatement costs; Net Zero goal, the theory and practice of the carbon market • Assessing Climate Risks, Vulnerability, Impacts, Adaptation, Loss & Damage; Tools and methods for climate risk assessment in Cities	8	0	0

2.	**Climate Change: Politics and Policy** • Divergence in approach of Developed and Developing Countries; Global geopolitical dynamics on climate change issues • International Climate Policies, Global Net Zero goal and energy transition strategy • National Climate Change Policy: National Action Plan on Climate Change (NAPCC); Nationally Determined Contributions; Roles of local governments in climate action. • Climate Finance: Issues and approaches, Flows, Mechanisms including Green Climate Fund (GCF), and Loss & Damage Fund	6	2	0
3.	**Strategies for Climate Resilience in Development Planning** • Defining adaptation and its significance in the context of climate change • Assessing climate vulnerability and resilience • Green Infrastructure; Climate-Resilient Infrastructure • Ecosystem-based Approaches: Ecosystem Restoration; Biodiversity Conservation • Community Engagement & Empowerment: Community-based Adaptation; Building Social Capital • Technology & Innovation • Education & Capacity Building • Climate action plans	6	2	0
4.	**Case Studies & Best Practices for Climate Resilient Development** • International Cases, such as, Rotterdam, Netherlands: Water Management and Infrastructure; Copenhagen, Denmark: Climate-Adaptive Urban Planning; New York City, USA: Coastal Resilience and Community Involvement; Singapore: Integrating Nature-Based Solutions; Cape Town, South Africa: Water Conservation and Management; Medellín, Colombia: Urban Green Spaces and Social Inclusion • Indian Cases, such as, Ahmedabad: Urban Heat Island Mitigation; Bengaluru: Water Management and Lakes Restoration; Chennai: Flood Management and Disaster Preparedness; Mumbai: Coastal Resilience and Protection; Hyderabad: Integrated Urban Planning for Climate Resilience; Visakhapatnam: Coastal Area Management	4	2	0
	Total	**24**	**6**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs (20%)
- **Minor Test-2:** Seminar/Case Study - Group Presentation (30%)
- **Major Test:** Written Test/Term Paper Submission & Presentation (50%)

Learning outcomes

Upon completion of this course, candidates would be able to:

1. possess a comprehensive understanding of climate change and the tools necessary to evaluate, promote, and implement effective climate resilience strategies (All evaluations)
2. develop skills to communicate complex climate change issues and resilience strategies to various audiences, including policymakers, community members, and the general public (Minor Test-2)

Pedagogical approach

Classroom lectures; Student Seminars; Invited talks from Climate Change Experts including Practitioners and Senior/Superannuated Govt. Officers; Case studies.

Suggested Readings

Module 1:

- Johansen, B. E. (2023). *Global Warming and the Climate Crisis: Science, Spirit, and Solutions*. Springer.

- Dessler, A. E. (2021). *Introduction to Modern Climate Change, 3rd edition*. Cambridge University Press.
- Ingram, A. (2023). *Climate Change Simplified: A Comprehensive Guide to Global Warming and Sustainable Living with 101 Essential Tips for a Greener Future and Reduced Carbon Footprint*. Authentic EcoPress.

Module 2:

- Tondon, U. (2016). *Climate Change: Law, Policy and Governance*. Eastern Book Company.
- Dubash, N. K. (ed.) (2011). *Handbook Of Climate Change and India: Development, Politics, and Governance*. Oxford University Press.
- Hussain, S., Hussain, E., Saxena, P., Sharma, A., Thathola, P., & Sonwani, S. (2024). Navigating the impact of climate change in India: A perspective on climate action (SDG13) and sustainable cities and communities (SDG11). *Frontiers in Sustainable Cities*, *5*, 1308684. https://doi.org/10.3389/frsc.2023.1308684.

Module 3:

- Singh, A. K. (2023). *Global Warming and Climate Change: Story of India's Climate Disaster and How to Avoid it*. Chennai, Notion Press Media Pvt Ltd.
- Pathak, B., & Dubey, R. S. (eds.) (2023). *Climate Change and Urban Environment Sustainability*. Gateway East, Singapore: Springer Nature Singapore Pte Ltd.
- Seto, K., Solecki, W., & Griffith, C. (2020). *The Routledge Handbook of Urbanization and Global Environmental Change*. Routledge.
- Norman, B. (2022). *Urban Planning for Climate Change*. Routledge.
- Bhadouria, R., Upadhyay, U., Tripathi, S., Singh, P. (eds.) (2022). *Urban Ecology and Global Climate Change*. Wiley-Blackwell.
- Dubash, N. K. (ed.) (2019). *India in a Warming World: Integrating Climate Change and Development*. Oxford University Press. https://doi.org/10.1093/oso/9780199498734.001.0001.
- Oktari, R. S., Syamsidik, Idroes, R., Sofyan, H., & Munadi, K. (2020). City Resilience towards Coastal Hazards: An Integrated Bottom-Up and Top-Down Assessment. *Water*, *12*(10), 2823. https://doi.org/10.3390/w12102823.
- Tyler, S., & Moench, M. (2012). A framework for urban climate resilience. *Climate and Development*, *4*(4), 311–326. https://doi.org/10.1080/17565529.2012.745389.
- Dakey, S., Deshkar, S., Joshi, S., & Sukhwani, V. (2023). Enhancing Resilience in Coastal Regions from a Socio-Ecological Perspective: A Case Study of Andhra Pradesh, India. *Sustainability*, *15*(12), 9565. https://doi.org/10.3390/su15129565.
- Urban Design Lab. Integrating Nature-Based Solutions (NBS) into Urban Planning Practices. https://urbandesignlab.in/integrating-nature-based-solutions-nbs-into-urban-planning-practices/#:~:text=Case%20Studies%20of%20NBS%20in%20Urban%20Planning&text=In%20Singapore%2C%20vertical%20gardens%20and,rainwater%20to%20reduce%20flooding%20risk.
- Parikh, J., Jindal, P., & Sandal, G. (2013). Climate Resilient Urban Development, Vulnerability Profiles of 20 Indian Cities. COE-IRADe. https://irade.org/Climate_Resilient_Urban_Development.pdf.
- Govindarajulu, D. (2014). Urban green space planning for climate adaptation in Indian cities. *Urban Climate*, *10*, 35-41. https://doi.org/10.1016/j.uclim.2014.09.006.

Module 4:

- Dolman, N., & Verlinde, J. (2024). Achieving a Water-Resilient Rotterdam: Past, Present and Future Perspectives. *Blue Papers*, *3*(1). https://doi.org/10.58981/bluepapers.2024.1.13.
- Graaf R.E. De, Der Brugge R. Van, J. Lankester, Der Vliet W. Van, L. Valkenburg. Local water resources and urban renewal. A Rotterdam case study. https://hal.science/hal-03231425/document.
- Negrello, M. (2023). Designing with Nature Climate-Resilient Cities: A Lesson from Copenhagen. In: Arbizzani, E., et al. *Technological Imagination in the Green and Digital Transition*. CONF.ITECH 2022. The Urban Book Series. Cham: Springer. https://doi.org/10.1007/978-3-031-29515-7_76.
- Jørgensen, G., Fryd, O., Lund, A. A., Andersen, P. S., & Herslund, L. (2022). Nature-based climate adaptation projects, their governance and transitional potential-cases from Copenhagen. *Frontiers in Sustainable Cities*, *4,* 906960. https://www.frontiersin.org/journals/sustainable-cities/articles/10.3389/frsc.2022.906960/full.

- Rudge, K. (2021). Participatory climate adaptation planning in New York City: Analyzing the role of community-based organizations. *Urban Climate*, *40*, 101018. https://doi.org/10.1016/j.uclim.2021.101018.
- Gornitz, V., Oppenheimerb, M., Koppc, R., Hortona, R., Ortond, P., Rosenzweiga, C., Soleckie, W., & Patrickf, L. (2020). Enhancing New York City's resilience to sea level rise and increased coastal flooding. *Urban Climate*, *33*, 100654. https://www.sciencedirect.com/science/article/pii/S2212095519301798?via%3Dihub
- Rosenzweig, C., Solecki, W.D., Blake, R., Bowman, M., Faris, C., Gornitz, V., Horton, R., Jacob, K., LeBlanc, A., Leichenko, R., Linkin, M., Major, D., O'Grady, M., Patrick, L., Sussman, E., Yohe, G., & Zimmerman, R. (2011). Developing coastal adaptation to climate change in the New York City infrastructure-shed: process, approach, tools, and strategies. *Climatic Change*, *106*, 93–127. https://doi.org/10.1007/s10584-010-0002-8.
- U. S. Climate Resilience Toolkit: Case Studies. https://toolkit.climate.gov/case-studies?f%5B0%5D=field_workflow_step%3A58.
- Tan, B. A., Gaw, L. Y., Masoudi, M., & Richards, D. R. (2021). Nature-Based Solutions for Urban Sustainability: An Ecosystem Services Assessment of Plans for Singapore's First "Forest Town". *Frontiers in Environmental Science*, *9*, 610155. https://doi.org/10.3389/fenvs.2021.610155.
- Cui, M., Ferreira, F., Fung, T. K., & Matos, J. S. (2021). Tale of Two Cities: How Nature-Based Solutions Help Create Adaptive and Resilient Urban Water Management Practices in Singapore and Lisbon. *Sustainability*, *13*(18), 10427. https://doi.org/10.3390/su131810427.
- Calverley, C. M., & Walther, S. C. (2022). Drought, water management, and social equity: Analyzing Cape Town, South Africa's water crisis. *Frontiers in Water*, *4*, 910149. https://doi.org/10.3389/frwa.2022.910149.
- Brühl, J., & Visser, M. (2021). The Cape Town drought: A study of the combined effectiveness of measures implemented to prevent "Day Zero". *Water Resources and Economics*, *34*, 100177. https://doi.org/10.1016/j.wre.2021.100177.
- Visser, M., Booysen, M. J., Brühl, J. M., & Berger, K. J. (2021). Saving water at Cape Town schools by using smart metering and behavioral change. *Water Resources and Economics*, *34*, 100175. https://doi.org/10.1016/j.wre.2020.100175.
- Anguelovski, I., Irazábal-Zurita, C., & Connolly, J. T. (2018). Grabbed Urban Landscapes: Socio-spatial Tensions in Green Infrastructure Planning in Medellín. *International Journal of Urban and Regional Research*, *43*(1), 133-156. https://doi.org/10.1111/1468-2427.12725.
- Grey, J. (2023). Making Space for Peace: A Case-study of Medellín Colombia. DGSi Working Paper No. 1, 2023. https://www.dur.ac.uk/media/durham-university/departments-/school-of-government-amp-int-affairs/DGSI_Diss1_DUFormat-final.pdf-2023-No.1.pdf.
- Smith, H., Medero, G.M., Crane De Narváez, S., & Mera, W. C. (2023). Exploring the relevance of 'smart city' approaches to low-income communities in Medellín, Colombia. *GeoJournal*, *88*, 17–38. https://doi.org/10.1007/s10708-022-10574-y.
- Mohammad, P., Goswami, A., & Bonafoni, S. (2019). The Impact of the Land Cover Dynamics on Surface Urban Heat Island Variations in Semi-Arid Cities: A Case Study in Ahmedabad City, India, Using Multi-Sensor/Source Data. *Sensors*, *19*(17),3701. https://doi.org/10.3390/s19173701.
- Veena, K., Parammasivam, K. M., & Venkatesh, T. N. (2020). Urban Heat Island studies: Current status in India and a comparison with the International studies. *Journal of Earth System Science*, *129*, 85. https://doi.org/10.1007/s12040-020-1351-y.
- Ramchandra, T., Sincy, V., & Asulabha, K. (2020). Efficacy of Rejuvenation of Lakes in Bengaluru, India. *Green Chemistry & Technology Letters*, *6*(1), 14–26. https://doi.org/10.18510/gctl.2020.613.
- Nagendra, H. (2016). Restoration of the Kaikondrahalli lake in Bangalore: Forging a new urban common. Pune, Maharashtra: Kalpavriksh. https://kalpavriksh.org/wp-content/uploads/2018/06/KaikondrahallilakecasestudyJune2016.pdf?srsltid=AfmBOoqyTX4yNgDLIl3a4yq2-PYTn1oDsghlimptCErVN1aFarTbQcYQ.
- Sundarmoorthy, T., Ramadurai, L., & Anuthaman, N. G. (2009). Urban Floods: Case Study of Chennai. *Disaster & Development*, *3*(1), 105-182. https://nidm.gov.in/journal/PDF/Journal/Journal20091/Journal20091d.pdf.
- Bremner, L. (2020). Planning the 2015 Chennai floods. *Environment and Planning E: Nature and Space*, *3*(3), 732-760. https://doi.org/10.1177/2514848619880130.
- Sehra, V., & Punia, M. (2020). Overcoming Barriers to Urban Flood Resilience: A Case of Hyderabad, India. IntechOpen. https://www.intechopen.com/chapters/72789.
- Baig, M. R. I., Ahmad, I. A., Shahfahad, Tayyab, M., & Rahman, A. (2020). Analysis of shoreline changes in Vishakhapatnam coastal tract of Andhra Pradesh, India: an application of digital

shoreline analysis system (DSAS). *Annals of GIS*, *26*(4), 361–376. https://doi.org/10.1080/19475683.2020.1815839
- Ramakrishnan, R., Agrawal, R., Remya, P., NagaKumar, K., Demudu, G., Rajawat, A., Nair, B., & Nageswara Rao, K. (2018). Modelling coastal erosion: A case study of Yarada beach near Visakhapatnam, east coast of India. *Ocean & Coastal Management*, *156*, 239-248. https://doi.org/10.1016/j.ocecoaman.2017.08.013.
- TERI (2014). Planning Climate Resilient Coastal Cities: Learnings from Panaji and Visakhapatnam, India. Working Paper. https://www.teriin.org/eventdocs/files/Working-Paper-climate-resilient.pdf.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Dr. Chandan Kumar, Prof. Shaleen Singhal, and Mr. R. R. Rashmi

Course Reviewers

1. Prof. P. K. Joshi, Professor, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India.
2. Dr Manish Kumar Shrivastava, Associate Director, Earth Science and Climate Change Division, The Energy and Resources Institute (TERI), New Delhi, India.

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course title: Sustainable Urbanization

Course code: PPS 196	**No. of credits:** 2	**L-T-P:** 22-08-00	**Learning hours:** 30

Pre-requisite course code and title (if any): None

Department: Department of Policy & Management Studies

Course coordinator(s): Prof. Shaleen Singhal	**Course instructor(s):** Prof. Shaleen Singhal

Contact details: shaleen.singhal@terisas.ac.in

Course type: Core	**Course offered in:** 2nd Semester

Course description

This course delves into the principles and practices of sustainable urbanization, highlighting the imperative to create urban environments that are economically viable, socially inclusive, and environmentally responsible. The course also examines the phenomenon of sustainable consumption and production (SCP) as it relates to urban areas. Urban centers have emerged as the primary hubs for economic growth and expansion. In 2023, over 55% of the global population resided in urban areas, and this figure is projected to rise to 70% by 2050. Urban areas, thus, need to prepare to accommodate this anticipated population surge. Cities depend on natural resources, energy, raw materials, food, and goods to sustain the daily lives of residents and support economic activities. The rapid urbanization and population growth in Indian cities have placed significant pressure on natural resources within urban areas and their surrounding rural regions. To progress toward sustainability, cities are striving to implement policies and strategies that promote efficient resource utilization, mitigate the impacts of climate change, and foster the development of a circular economy that balances escalating consumption patterns with a shift toward sustainable lifestyles. This approach necessitates the integration of SCP practices across key development sectors within cities.

Learning objectives:

- To orient students on the trends and patterns of urbanization and the concept of sustainable urbanization along with assessing strength and weaknesses of existing urban development and management policies in India.
- To discuss key global and Indian initiatives, policy processes, planning and governance for sustainable urbanization.
- To explore and discuss innovative urban governance and management strategies promoting sustainability across the sectors (such as built environment, transport, and basic services).

Course content

Module	Topic	L	T	P
1.	**Introduction to Urbanization and Sustainability Issues** • Trends and Patterns of Global & Indian Urbanization: component of urban population growth, emergence of megacities, urban sprawl and suburbanization, informal settlements, environmental concerns • The trajectories of urban policy in India • Strengths and weaknesses of existing urban development and management policies • Concept of sustainability in urban context • Phenomenon of Sustainable Consumption Practices (SCP) in relation to urban centres; discourse relating to resource efficient, smart and productive, and climate compatible cities	6	2	0
2.	**Planning and Governance for Sustainable Urbanization** • Overview of global and national movements/initiatives for sustainable urban development • Policy processes, planning, governance, and role of key actors and institutions (as citizens, planners, politicians, officials, consultants, developers, contractors, non-governmental organizations, etc.) towards resource efficiency and decoupling and in realizing transitions towards sustainable living and behavioural change. • SDG 11 • Role of organizations such as International Council for Local Environmental Initiatives (ICLEI), UN HABITAT. • Challenges and opportunities of sustainable urbanization	6	2	0
3.	**Innovative Design, Strategies & Best Practices for Urban Sustainability** • Principles of inclusive and participatory urban planning	6	2	0

	• Smart cities mission and sustainability linkages • Overview of housing & building construction sector in India • Sustainable urban transport and policy linkages and strategies • Municipal waste management: strengths and weaknesses of existing policies, regulations; national and global best practices • Water supply and sanitation: water demand management; wastewater management initiatives • Energy scenario of cities in India, current and future energy consumption and energy mix, appraisal of policy initiatives • Urban design strategies and examples • Service level benchmarking and performance measurement			
4.	**Future Trends and Prospects in Sustainable Urbanization** • Future trends of urbanization and their implications for sustainability • Technological advancements shaping future urban landscapes • Key aspects of Nature-Based Solutions (NbS) and its integration in India's Urban Development Policies • Competitiveness of cities, key dimensions and strategies	4	2	0
	Total	**22**	**8**	**0**

Evaluation criteria:

Course grades will be based on the following criteria:

- **Minor Test-1:** Short-Answer Type Questions/Quizzes/MCQs/Article structure (on identification and rapid appraisal of an urban theme) (30%)
- **Minor Test-2:** Seminar/Debate Sessions on preliminary analysis of data and relevant case examples (20%)
- **Major Test:** Written Test/Term Paper submission & presentation on sectoral analysis and recommendations relating to an identified urban phenomenon (50%)

Learning outcomes

Upon completion of this course, candidates would be able to:

1. appreciate the significance of sustainable consumption and production and resource efficiency in context of complexities relating to urbanisation and its linkages to sustainable development in urban areas (All evaluations)
2. examine city development sectoral policies and strategies and their linkages to SDGs such as the SDG 11 (Sustainable Cities and Communities) and SDG 12 (Responsible Consumption and Production) (All evaluations)

Pedagogical approach

Classroom lectures; Student Seminars; Brainstorming Tutorials; Case studies.

Suggested Readings

Module 1:

- Lehmann, H., & Rajan, S. C. (2015). Sustainable Lifestyles. Pathways and Choices for India and Germany. https://www.researchgate.net/profile/Sudhir_Rajan/publication/289522018_Sustainable_Lifestyles/links/568e3f6108ae78cc0515575a.pdf.
- Low-Carbon Green Growth in Asia Policies and Practices: A Joint Study of the Asian Development Bank and the Asian Development Bank Institute. 2013. http://www.adb.org/publications/low-carbon-green-growth-asia-policies-and-practices.
- Rebitzer, G., Ekvall, T., Frischknecht, R., Hunkeler, D., Norris, G., Rydberg, T., Schmidt, W. –P., Suh, S., Weidema, B. P., & Pennington D. W. (2004). Life cycle assessment: Part 1: Framework, goal and scope definition, inventory analysis, and applications. *Environment International*, *30*(5), 701-720. http://www.sciencedirect.com/science/article/pii/S0160412003002459.
- Singhal, S. Berry, J., & McGreal, S. (2010). Linking regeneration and business with competitiveness for low carbon cities: lessons for India. In India Infrastructure Report 2010: Infrastructure.
- Smith, A. (2007). *Sustainable cities*. London: Franklin Watts.
- Tukker, A., Cohen, M.J., Hubacek, K., & Mont, O. (2010). Sustainable consumption and production. *Journal of Industrial Ecology*, *14*(1), 1-3. https://s3.amazonaws.com/academia.edu.documents/34557519/JIE_SCP_Editorial.pdf?AWSAcce

ssKeyId=AKIAIWOWYYGZ2Y53UL3A&Expires=1507887160&Signature=4QPrIQ2BqPrVvtEePsF%2FmCORdsU%3D&response-contentdisposition=inline%3B%20filename%3D2010_Editorial_Sustainable_Consumption_a.pdf.

- Vergragt, P.J., Dendler, L., de Jong, M., & Matus, K. (2016). Transitions to sustainable consumption and production in cities. Journal of Cleaner Production, 134, 1-12. http://www.sciencedirect.com/science/article/pii/S0959652616305054.
- Akenji, L., & Bengtsson, M. (2014). Making Sustainable Consumption and Production the Core of the Sustainable Development Goals. *Sustainability*, *6*, 513-529. http://www.mdpi.com/2071-1050/6/2/513.
- Bhattacharya, S., Rathi, S., Patro, S.A., & Tepa, N. (2015). Reconceptualising smart cities: a reference framework for India. Bangalore: Center for Study of Science, Technology and Policy (STEP). http://niti.gov.in/writereaddata/files/document_publication/NITI%20Aayog%20Workshop%2002092015%20Presentation%20by%20CSTEP.pdf.
- Chourabi, H., Nam, T., Walker, S., Gil-Garcia, J.R., Mellouli, S., Nahon, K., Pardo, T.A. and Scholl, H.J., 2012, January. Understanding smart cities: An integrative framework. In System Science (HICSS), 2012 45th Hawaii International Conference on (pp. 2289-2297). IEEE. http://ieeexplore.ieee.org/abstract/document/6149291/?reload=true.
- Hasan Rashed, A. (2024). Sustainable Urbanization between Two Ambitious Global Agendas: An Integration Approach. *IntechOpen*. https://www.intechopen.com/chapters/1176306.

Module 2:

- Fedrigo, D., & Hontelez, J. (2010). Sustainable consumption and production. *Journal of Industrial Ecology*, 14(1), 10-12.
- Cohen, B., & Muñoz, P. (2016). Sharing cities and sustainable consumption and production: Towards an integrated framework. *Journal of Cleaner Production*, *134*, 87-97. https://doi.org/10.1016/j.jclepro.2015.07.133.
- Leal Filho, W., Platje, J., Gerstlberger, W., Ciegis, R., Kääriä, J., Klavins, M., & Kliucininkas, L. (2016). The role of governance in realising the transition towards sustainable societies. *Journal of Cleaner Production*, *113*, 755-766. https://doi.org/10.1016/j.jclepro.2015.11.060.
- Kandpal, R., & Okitasari, M. (2023). Governance transformation towards localisation of sustainable development goal 11 in India. *World Development Sustainability*, *2*, 100069. https://doi.org/10.1016/j.wds.2023.100069.
- Salvador, M., & Sancho, D. (2020). The Role of Local Government in the Drive for Sustainable Development Public Policies. An Analytical Framework Based on Institutional Capacities. *Sustainability*, *13*(11), 5978. https://doi.org/10.3390/su13115978.

Module 3:

- Singhal, S., & Kapur, A. (2002). Industrial Estate Planning and Management in India - an Integrated Approach towards Industrial Ecology. Journal of Environmental Management, Elsevier.
- UNEP. (2015). District energy in cities: unlocking the potential of energy efficiency and renewable energy. http://districtenergyinitiative.org/report/DistrictEnergyReportBook.pdf.
- Von Weizsäcker, E. U., de Larderel, J., Hargroves, K., Hudson, C., Smith, M., & Rodrigues, M. (2014). Decoupling 2: technologies, opportunities and policy options. A Report of the Working Group on Decoupling to the International Resource Panel.

Module 4:

- Chan, F. K. S., & Chan, H. K. (2022). Recent research and challenges in sustainable urbanisation. *Resources, Conservation and Recycling*, *184*, 106346. https://doi.org/10.1016/j.resconrec.2022.106346.
- Wang, J., Cao, J., & Yu, C. W. (2020). Development trend and challenges of sustainable urban design in the digital age. *Indoor and Built Environment*. https://doi.org/10.1177/1420326X20976058.
- Cohen, B. (2005). Urbanization in developing countries: Current trends, future projections, and key challenges for sustainability. *Technology in Society*, *28*(1-2), 63-80. https://doi.org/10.1016/j.techsoc.2005.10.005.
- Kundu, D., & Pandey, A. (2021). Sustainable Urbanisation in India and Delhi: Challenges and Way Forward. ASEFSU23 Background Paper, Asia-Europe Foundation. https://asef.org/wp-content/uploads/2021/11/ASEFSU23_Background-Paper_Sustainable-Urbanisation-in-India.pdf.

- Abedalrhman, K., Alzaydi, A., & Shiban, Y. (2024). The Convergence of Artificial Intelligence (AI) and Financial Technologies (FinTech) in Shaping Future Urban Landscape Planning. *Advances in Research*, 25(5), 337-352. https://doi.org/10.9734/air/2024/v25i51166.
- Yan, Z., Jiang, L., Huang, X., Zhang, L., & Zhou, X. (2023). Intelligent urbanism with artificial intelligence in shaping tomorrow's smart cities: Current developments, trends, and future directions. *Journal of Cloud Computing*, *12*(1), 1-13. https://doi.org/10.1186/s13677-023-00569-6.
- Mehmood, R., Yigitcanlar, T., & Corchado, J. M. (2023). Smart Technologies for Sustainable Urban and Regional Development. *Sustainability*, *16*(3), 1171. https://doi.org/10.3390/su16031171.
- Shen, L., Ochoa, J. J., & Bao, H. (2023). Strategies for Sustainable Urban Development—Addressing the Challenges of the 21st Century. *Buildings*, *13*(4), 847. https://doi.org/10.3390/buildings13040847.

Student responsibilities

- At least 75% attendance will be necessary to be able to appear for the final exam.
- Active classroom participation; Critical reflections and timely submission according to the evaluation criterion.

Course Outline prepared by: Prof. Shaleen Singhal

Course Reviewers

1. Prof. Shrawan K. Acharya, Centre for the Study of Regional Development, School of Social Sciences, Jawaharlal Nehru University, New Delhi, India.
2. Mr Arab Hoballah, Senior Expert, SWITCH-Asia SCP Facility, Bangkok (Former Chief, Sustainable Lifestyles, Cities and Industry, UNEP)

Additional Information

This Course outline was approved in the 60th Academic Council Meeting held on 24th December 2024 at TERI School of Advanced Studies, New Delhi.

Course Title: Fundamentals of Environmental, Social, and Governance (ESG) Principles			
Course code: MPD 149	**No. of credits:** 3	**L-T-P:**26-4-0	**Learning hours:** 30
Pre-requisite course code and title (if any): None			
Department: Department of Policy and Management Studies			
Course coordinator: Dr. Gopal K. Sarangi		**Course instructor:** Dr. Gopal K. Sarangi	
Contact details: gopal.sarangi@terisas.ac.in			
Course type: Core		**Course offered in:** Semester-2	

Course Description:

This course is an introduction to Environmental, Social, and Governance (ESG) principles and their significance in business and investing. It covers the key components of ESG, including environmental sustainability, social responsibility, and corporate governance, as well as tools and methodologies for ESG analysis and valuation. The course also explores the challenges and barriers to implementing ESG practices and provides real-world examples of companies addressing social and environmental issues effectively. Additionally, the course also covers ESG reporting and communication. By the end of the course, participants will have a foundational understanding of ESG principles and their role in creating sustainable business practices.

Course objectives

- To provide fundamentals of Environmental, Social, and Governance (ESG) principles and their significance in business and investing.
- To understand and examine the key components of ESG, including environmental sustainability, social responsibility, and corporate governance, as well as tools and methodologies for ESGanalysis and valuation.
- To analyze challenges and barriers to implementing ESG practices, along with real-world examples of companies addressing social and environmental issues effectively.
- To impart a foundational understanding of ESG principles and their role in creating sustainable business practices,
- To be able to integrate ESG factors in investment decision-making processes and effectively communicate ESG performance to stakeholders.

Course contents

Module	**Topic**	**L**	**T**	**P**
1	**Introduction to ESG Principles** Key concepts in ESG and their significance in business and investing; Integrating environmental, social, and governance factors into investment decision-making processes, differentiating ESG from impact investing, socially responsible investing (SRI), and other sustainability frameworks.	2	0	0
2	**Historical development of ESG and its current prominence** Origins and emergence of ESG, key milestones in ESG's development and the establishment of framework, impact of regulations and international agreements on ESG practices, investor demand and corporate responsibility, ESG's shift from niche to mainstream driven by materiality and financial relevance, emerging trends and the needs for continuous improvement in ESG frameworks.	4	0	0
3	**ESG and Sustainable Development** Exploring the relationship of ESG principles with SDGs, de-carbonization goals and concepts of circular economy, overlap and differences between ESG, circular economy, and CSR.	2	0	0
4	**Environmental Factors** Definition and importance of environmental sustainability, Impact of climate change on businesses and society, environmental regulations and their influence on ESG practices, natural resource management and their integration within ESG frameworks, environmental challenges and innovative solutions.	4	0	0
5	**Social Factors** Role of social responsibility in ESG, stakeholder engagement, supply chain management, fair labor practices within ESG frameworks, human rights, diversity, equity and inclusion in ESG.	4	0	0
6	**Governance Factors** Significance of corporate governance in ESG, board structure and composition for effective governance, executive compensation and	4	0	0

	accountability, business ethics and code of conduct, legal and policy environment for ESG at both national and international levels, effects of mandatory and optional legislative pronouncements on ESG practices; Institutional role played by capital market regulators such as SEBI, SEC in mandating ESG disclosure requirements for listed companies.			
7	**ESG in Different Industries** Exploring sector specific ESG considerations, challenges, and best practices in industries such as energy, finance, technology, and consumer goods, real-world case studies and examples showcasing successful ESG integration in different industries, performance and rating.	3	2	0
8	**ESG Mapping, Implementation and Reporting** Frameworks for ESG disclosures (GRI, BRSR, CDP, CSRD and others), various tools and methodologies used for analysing and evaluating ESG performance, mapping techniques and estimation of ESG, influence of ESG on risk management and financial performance.	3	2	0
	Total	**26**	**4**	**0**

Evaluation criteria:

- Assignment submission 20%
- Case Study Analysis and Presentation 30%
- ESG Report Preparation 50%

Learning outcomes:

By the end of the course, the participants will:

1. Have a comprehensive understanding of ESG and its significance in business and investing, including the key components of ESG and their relationship with sustainable development.
2. Understand the impact of environmental factors on businesses and society, including environmental sustainability and related regulations.
3. Appreciate the importance of social responsibility in ESG, including stakeholder engagement, labor practices, diversity, and inclusion.
4. Recognize the significance of corporate governance in ESG, including the board structure, executive compensation, and accountability.
5. Develop proficiency in integrating ESG in investment decision-making processes, using frameworks, reporting standards, and tools for analysis and valuation, as well as effectively communicating ESG performance to stakeholders.

Pedagogical approach:

A combination of class-room interactions, participative group discussion and presentations, tutorials and assignments.

Materials:

Suggested Readings

- Garcia, AS.; Mendes-Da-Silva, W. Orsato Renato J. (2017) Sensitive industries produce better ESG performance: Evidence from emerging markets. Journal of Cleaner Production. Vol.150, pp. 135-147 http://dx.doi.org/10.1016/j.jclepro.2017.02.180
- Gupta, A.K. and Gupta, N (2020) Effect of corporate environmental sustainability on dimensions of firm performance e Towards sustainable development: Evidence from India Journal of Cleaner Production. Vol.253. https://doi.org/10.1016/j.jclepro.2019.119948
- Bansal, S.; Khanna, M.; Jain, S. (2017) The Corporate Social Responsibility Act in India: An Early Assessment. South Asian Network for Development and Environmental Economics (SANDEE) Working Paper No. 120–17
- National Stock Exchange of India (2020). ESG Analysis on 50 Listed Companies in India. jointly published by Stakeholder Stakeholders Empowerment Services (SES) and NSE.
- Nemoto N. and Morgan, P.J. (2020) Environmental, Social, and Governance Investment
- Opportunities and Risks for Asia. Naoko Nemoto and Peter J. Morgan (eds). Asian Development Bank Institute: Japan
- Nemoto N. and Liu, L. (2020) Measuring the Effect of Environmental, Social, And Governance on Sovereign Funding Costs. ADBI Working Paper Series No. 1088. Asian Development Bank Institute
- Boffo, R., and R. Patalano (2020), "ESG Investing: Practices, Progress and Challenges", OECD Paris,
- www.oecd.org/finance/ESG-Investing-Practices-Progress-and-Challenges.pdf

Required text.

1. ESG Disclosure Handbook (WBSCD)

2. Values at work (Daniel C. Esty, Todd Cort)
3. SA 8000 Guidelines
4. Global Reporting Initiative
5. Report of the Committee on Business Responsibility and Sustainability Reporting
6. BRSR Format
7. Guidance Note for Business Responsibility & Sustainability Reporting Format

Websites and Links:

8. Green House Gas Protocol (www. https://ghgprotocol.org/)
9. FIJI Water and Corporate Social Responsibility - Green Makeover or Greenwashing? https://www.iveypublishing.ca/s/product/fiji-water-and-corporate-social-responsibility-green-makeover-or-greenwashing/01t5c00000Cwr4RAAR
10. ESG Metrics: Reshaping Capitalism? - https://www.hbs.edu/faculty/Pages/item.aspx?num=50871

Case Studies

Shall be recommended during the course of delivery.

Student responsibilities:

Attendance, timely feedback, discipline: as per university rules, adopt peer learning and knowledge sharing within the class.

Course reviewers:

- Prof Harpreet Kaur, National Law University, New Delhi
- Prof. Deva Prasad M., Associate Professor Humanities & Liberal Arts in Management, IIM Kozhikode

Additional information (if any):

This Course outline was prepared by Mr Ranjan Kumar Mishra and Dr Swarup Dutta and approved in the 56th Academic Council Meeting on 10th August 2023 at TERI School of Advanced Studies, New Delhi.

Course Title: Agriculture and Rural Development			
Course code: PPS 197	**No. of credits:** 2	**L-T-P:** 30-0-0	**Learning hours: 30**
Pre-requisite course code and title (if any): None			
Department: Policy and Management Studies			
Course Coordinator: Dr Swarup Dutta		**Course Instructors:** Dr Swarup Dutta; Dr Gaurika Chugh	
Contact Details: swarup.dutta@terisas.ac.in			
Course Type: Core		**Course Offered in:** Semester 2	

Course Description:

This course aims to analyse the performance of the agricultural sector since Independence, what had led to changes in performance of the sector and what accounts for these changes. It brings into focus the impact of agricultural performance on different sections of the rural population. In this backdrop the course also focusses on policy level developments that had impacted Indian agriculture in the pre-and post-reform period and the changing role of rural institutions to meet these challenges for a sustainable growth trajectory. The new trade policy regime, following the WTO Agreement on Agriculture, has necessitated major structural changes in the way countries support their agriculture. Against this background, it covers two of the major issues—food security and climate change—that has come up with changes in economic regimes at the domestic and global level. Through this course, the students will get a better understanding of the interlinkages between agriculture, food security and future global development and environmental changes.

Course objectives:

- Understanding agriculture and food security in the context of global developmental challenges
- Acquaint the students with the growth performance of Indian agriculture since Independence
- Understanding the impact of macro policy level changes on different sections of the rural population in India
- Understanding various agrarian issues and challenges in relation the development of new agricultural technology and also the formulation of policies in the field of agriculture and rural development

Course content

Module	Topic	L	T	P
1	**Conceptualizing Agriculture and Food security for Sustainable Development** This module is designed to help the students get a better understanding of the concepts of food security and agriculture and to link it with the various global developmental challenges such as climate change. The Module will also introduce the students to various methods of enhancing the sustainability of the agriculture and food systems especially under current and future scenarios of climate change and resource scarcity. The module will cover the four topics given below; ▪ Agriculture and food security: Concepts ▪ Agriculture and global development challenges ▪ Agriculture and climate change ▪ Sustainable agriculture systems	10	0	0
2.	**Growth and Policy Interventions** The main aim of this module is to gauge the performance of the post-independent Indian agriculture and policy interventions at different phases. The module will enable the students to understand impacts of	10	0	0

	policies on different classes in the rural areas and also the development trajectory of Indian agriculture since Independence. Three main topics of discussions are as follows" ▪ Understanding growth performance of Indian Agriculture- (Pre-and Post-Reforms); ▪ Implementation of Land Reforms in India- (The Case of West Bengal); ▪ Economic Differentiation in the rural areas			
3.	**Agrarian changes in Rural development** The main aim of this model is to understand various issues related rural and agricultural development in India. The discussion will start with the Green Revolution and its social impact in Indian agriculture and society. In the second part of discussion, a special attention will be given on the ongoing agrarian crises in India. In the third part, the introduction of new agricultural technology will be discussed. Finally, a topic on various developmental challenges of scheduled tribes in India will be discussed. Thus, four major topics of discussions are – ▪ Green Revolution in India and its impact ▪ Contemporary agrarian crises in India ▪ Biotechnology in Agriculture: some issues and challenges ▪ Developmental Challenges of Scheduled Tribes in India	10	0	0
		30	**0**	**0**

Evaluation criteria:

1. **Module-1:** Test-1/Term Paper 40% [After the completion Module 1/ last week of February]
2. **Module-2:** Test-2 /Presentation-1 30% [After the completion Module 2/ second week of March]
3. **Module -3:** Test-3/ Presentation-2 30 % [After the completion Module 3/ last week of April]

Term Paper: For the term paper, the students will select a topic from their area of interests in the respective module of the course.
This is an individual assignment where the students will be asked to select a topic related to Module 1 in consultation with the respective faculty member of the module. The assignment will include introduction/ background, objectives, findings and discussion and relation to the SDGs.

Presentation: It is exclusively individual presentation. The topic of the presentation will be based on the agrarian issues and will be selected in consultation with the respective faculty member of the module. The presentation will include introduction, research problem and objective, findings and discussion and policy recommendation.

Learning outcomes:

Students will develop a critical understanding on the growth trajectory and development of agricultural sector in India and on issues like food security and climate change that can impact the livelihood strategy of substantial sections of the rural population. The specific outcomes of the above-mentioned evaluation criteria as follows:

- **Test-1:** An understanding of interlinkages between agriculture, food security and global developmental challenges
- **Test-2:** Critical understanding of growth trajectories of Indian agriculture and policy impacts on different sectors of the rural population
- **Test-3:** Critical understanding of agrarian changes in Rural development

Pedagogical approach:

Class sessions will entail a lecture component, combined with discussion of assigned readings and the documentaries shown. Students will write two term papers and give one oral presentation which will be evaluated on the basis of empirical understanding as well as the critical review of the subject, which would be evaluated by the instructors.

References:

Module I:

- Grote U., 2014. Can we improve Global food security? A socio-economic and political perspective. Food Security, 6:187–200
- Brindaban and Rabinge 2013, Megatrends in agriculture, Global food security. 1:99-105
- Ecker O. and C. Breisinger. 2013. Revisiting food and nutrition security: A comprehensive overview, Journal of Agricultural Economics and Development, 2(7), 280- 289.
- Lal et al 2011. Climate change and food security. Springer Publications. Chapter 13, section 13.3 – 13.5, pp. 188-196.
- Sirohi S. and Michaelowa A. 2007. Sufferer and cause: Indian livestock and climate change. Climatic Change 85:285–298
- Foley et al 2011. Solutions for a cultivated planet. Nature 478: 337-342.
- Nellemann, C., MacDevette, M., Manders, T., Eickhout, B., Svihus, B., Prins, A. G., Kaltenborn, B. P. (Eds). February 2009. The environmental food crisis – The environment's role in averting future food crises. A UNEP rapid response assessment. United Nations Environment Programme, GRID-Arendal, http://www.grida.no/publications/rr/food-crisis/
- Aggarwal et al 2004. Adapting food systems of the Indo-Gangetic plains to global environmental change: key information needs to Environmental Science n Policy 7: 487–498.
- Egger n Dixon 2014_Beyond Obesity and Lifestyle A Review of 21st Century Chronic Disease Determinants
- Regmi and Meade (2013). Demand side drivers of global food security, Global Food security, 2 (3): 166-171

Module II:

- Mohan Rao, J. and Storm, Servaas (1998), "Distribution and Growth in Indian Agriculture", in Byres, Terence J., The Indian Economy: Major Debates since Independence, OUP.
- De Roy (2017), "Economic Reforms and Agricultural Growth in India", *Economic and Political Weekly*, Vol 52, No.9.

- Rawal and Mishra (2002), "Agrarian Relations in Contemporary West Bengal", in Ramachandran, V. K and Swaminathan, M. (2002) (eds.), *Agrarian Studies: Essays on Agrarian Relations in Less=Developed Countries*, Tulika Publishers, New Delhi.
- De Roy (2016), "Changes in the Distribution of Cultivated Land and Occupational Pattern in Rural West Bengal", *Indian Journal of Agricultural Economics*, Vol. 71, no. 4.
- Patnaik, Utsa (1990), *Agrarian Relations and Accumulation*: *The mode of production debate in India, OUP, 1990*.

Module III

- Association for Democratic Rights (2000). *Suicides in rural area of Punjab*. AFDR Ludhiana.
- Chand, R. (2004). India's national agricultural policy: a critique. Indian Journal of Agricultural Economics, 64(2) 164-187
- Cleaver, H.M. (1972). The contradictions in the Green Revolution, *The American Economic Review*, 62(2): 177–86.
- Gandhi, Vasant P. (1997). Technology, cost reduction and returns in agriculture: A study of wheat and rice in Punjab. *Vikalpa*, 22(2) April–June: 35–43.
- Gill, A. (2000). *Rural credit markets—financial sector reforms and the informal lenders*. New Delhi: Deep and Deep Publication.
- Gill, A. (2004). Interlinked agrarian credit markets: Case study in Punjab. *Economic and Political Weekly*, 39(83): 3741–3751.
- Gill, A. and Singh, L. (2006). Farmer's suicides and response of public policy: Evidence diagnosis and alternatives from Punjab. *Economic and Political Weekly*, 41(26): 2762–2768.
- Institute for Development and Communication. (1998). *Suicide in rural Punjab*. Chandigarh: IDC.
- Iyer, K. Gopal and Manick, G.S. (2000). *Indebtedness, impoverishment and suicides in rural Punjab*. Delhi: India Publisher.
- Manav, C. (2006). Debt drives Indian farmers to suicide. Inter Press Service.
- Mearns, R. (1999). Access to land in rural India—policy issues and options. Policy
- Nadkarni, M.V. (1988). Crisis of increasing costs in agriculture: Is there a way out? *Economic and Political Weekly*, 23(29): A114–A119.
- Sainath P, (1996) Everybody loves a good drought. Penguin Publication.
- Satish, P. (2006). Institutional credit: Indebtedness and suicides in Punjab. *Economic and Political Weekly*, 41(26): 2754–2761.

• Singh, K., Singh, S., and Kangra, H.S. (2007). *Status of farmers left farming in Punjab*. A report by Punjab State Farmer's Commission in collaboration with Punjab Agricultural University, Ludhiana. Government of Punjab, Chandigarh.
Additional information (if any): None
Student responsibilities: Attendance, feedback, discipline: as per university rules.

Course reviewers

1. Dr. Mala Narang Reddy, Faculty (Guest), IIM-Amritsar, Punjab-05
2. Mr. V. Gunasekaran, Assistant Professor, Ramanujan College, University of Delhi-19

Course title: Contracts law and management			
Course code **MPL 144**	**No. of credits: 2**	**L-T-P distribution:** 26-2-0	**Learning hours:** 28
Pre-requisite course code and title (if any): None			
Faculty	**Department: Centre for Postgraduate Legal Studies**		
Course coordinator (s) Dr. Manini Syali	**Course instructor (s)** Dr. Manini Syali		
Contact details – manini.syali@terisas.ac.in			
Course type	**Elective**		
Course offered in	**Semester 2**		

Course Description

Contract gives the foundation of infrastructure projects. This course provides an advanced understanding of contract laws with respect to the infrastructure projects. Students will be exposed to foundations of contractual liability. The course will look into specific infrastructure contracts to get an understanding as to how different industries work.

Infrastructure contracts of big projects need proper contract management. Students will be given an in depth understanding of contract management and the various processes attached with it. The course will go into professional understanding of possible conflict scenarios in project cycle and conflict resolution through case studies. The course taught through various case studies expose students to various sets of contract laws in infrastructure business.

Course objectives

1. To provide an advanced understanding of contract law and its implications.
2. To analyse specific types of infrastructure contracts and its various forms.
3. To understand contract management and dispute resolution

Course content	**L**	**T**	**P**
Module 1: Principles of Contract Law	**6**		
Basic principles for Formation of Contract; - Discharge of contracts Specific Contracts: Agency, Indemnity, Guarantee, Bailment			
Module 2: Infrastructure Contracts	**2**	**8**	
Public Private Partnership Models(PPP), Joint Ventures, Management Contract, Work & Cost Contract, Leasing out, Model Concession Agreements, Fee- Sharing Agreements, State Support Contracts, Security Trust Contracts, Share Pledge Contracts, Drafting Specific Contracts – Role Play – Negotiating Contracts			
Module 3: Contract Management	**2**	**4**	
Importance of Contract management – Upstream or Pre-award activities - Creating Functional Team(s) for Risk Analysis & Contract Management Creating Templates for Contracts - Creating Contract Management Processes – Contract exit strategy - Dispute Resolution Planning and Processes - Contract Training Hypothetical Case Scenarios			

Module 4: Conflict Resolution	**2**	**4**	
Alternative dispute resolution mechanisms – Arbitration, Mediation, Conciliation and Negotiation Arbitration and Conciliation Act, 1996 – Arbitral Award – Appeal – Conciliation			
Total	**12**	**16**	

Evaluation criteria

Class Participation: 10%
Essay: 25%
Presentation: 25%
Major Exam: 40%

Learning outcomes

By the end of the course, it is expected that the students will:

1. Be able to understand implications of infrastructure contracts.
2. Be able to critically analyse contracts and make constructive amendments.
3. Be able to understand the management of contracts and the resolution of disputes.

Pedagogical approach

Predominantly based on classroom teaching. It is expected that the students come prepared with the readings, thus leading to a healthy discussion.

Materials

Suggested Readings

Books:

1. Sir Jack Beatson FBA, Andrew Burrows FBA, QC (Hon)., and John Cartwright, 30th edn *Anson's Law of Contract*, OUP, 2016.
2. Sairam bhatt ed., *Law of Business Contracts in India*, Sage, 2009.
3. Piyush Joshi, *Law Relating to Infrastructure Projects*, Butterwoths, 2003
4. Stephen Furst, Sir Vivian Ramsey, 9th edn., *Keating on Construction Contracts*, Sweet & Maxwell, 2012.

Journal Articles

1. Marques, R. and Berg, S., "Revisiting the Strengths and Limitations of Regulatory Contracts in Infrastructure Industries", J. Infrastruct. Syst., 10(4) 2010 334-342.
2. Marques, R. and Berg, S. "Risks, Contracts, and Private-Sector Participation in Infrastructure", Journal of Construction Engineering and Management, 137(11) 2011 925-932.
3. Ellen Dannin, Crumbling Infrastructure, "Crumbling Democracy: Infrastructure Privatization Contracts and Their Effects on State and Local Governance", 6 Nw. J. L. & Soc. Pol'y. 47 (2011)

Additional information (if any)

Student responsibilities

Attendance, feedback, discipline, guest faculty etc

Course reviewers

1. Mr. Nishant Beniwal, Counsel, Khaitan & Co
2. Dr. Bindu Ronald, Professor, SLS

Course title: Competition Law and Policy			
Course code	**No. of credits:** 2	**L-T-P distribution: 22** – 0 - 12	**Learning hours:** 28
Pre-requisite course code and title (if any): Infrastructure Law and Policy (MPL 157)			
Faculty	**Department of Policy Studies (Centre for Postgraduate Legal Studies)**		
Course coordinator (s) Dr Manini Syali	**Course instructor (s)** Dr Manini Syali		
Contact details- manini.syali@terisas.ac.in			
Course type	Elective		
Course offered in	Semester 2		

Course Description

Competition law is aimed at protecting the process of competition within the market. Since the nineties, almost all developing countries have enacted competition laws in the lines of the laws of developed countries. This course is an attempt to address some of the issues in competition law that is of interest to countries like India. This course builds on the basic course on *Competition law* at the undergraduate level and the *Infrastructure Law and Policy* course offered in the I Semester.

Course objectives

1. To understand the need and rationale for competition law from a developmental perspective.
2. To critically examine some of the crucial issues like the interface with IPR laws, regulatory laws, environmental laws, and public procurement laws.
3. To critically analyse the emerging international competition law and its impact on developing countries.

Course content	**L**	**T**	**P**
Module 1: Introduction	**10**		**0**
Objectives of competition law and policy – Basic concepts: relevant market, anti-competitive agreements, abuse of dominant position and anti-competitive combinations – Evolution of Indian competition law Emerging International Competition Law – Extraterritorial application – WTO agreements - FTAs			
Module 2: Competition Law and Regulation	**4**		**4**
Role of sectoral regulators in competition issues – case studies of infrastructure sector			
Module 3: Competition Law and IPRs	**4**		**4**
Objectives: complimentary or contradictory? – Competition law remedies for IPR abuses: compulsory licensing – TRIPS provisions			
Module 4: Competition Law and other Government Policies	**4**		**4**
Competition law and public procurement – methods of public procurement – bid rigging, collusive bidding and cartelization Competition law and environmental policy – impact of environmental			

policy on competition: barriers to entry, collusion – Types of governmental interventions and its impact on competition Competition law and labour law – freedom of association and collective bargaining			
Total	**22**	**0**	**12**

Evaluation criteria

- Class participation : 10
- Term Paper : 25
- Presentations : 25
- Major Test : 40

Learning outcomes

By the end of the course, it is expected that the students would have:

1. Acquired a critical understanding of competition law and its impact on developing countries like India
2. Acquired the skills to contribute to the academic literature on competition law in the form of position papers, review articles etc.

Pedagogical approach

Predominantly based on classroom teaching. In addition, role play and moot courts will be used. A lot of emphasis will be given on self-study. For this, study materials for each module will be circulated in advance.

Materials

Suggested Readings

1. Kumar, A. (2007), *The Evolution of Competition Law in India*, in Vinod Dhall (ed.), Dhall, Vinod (ed.), *Competition Law Today: Concepts, Issues, and the Law in Practice*, New Delhi: Oxford University Press.
2. Government of India (2000), *Report of the High-Level Committee on Competition Policy and Law*
3. Singh, A. (1999*), Competition Policy, Development and Developing Countries*, South Centre
4. Sands, Philippe *et.al.* (2012), *Principles of International Environmental Law*, Third Edition, Cambridge: Cambridge University Press. Ch. 19.
5. Gallego, Beatriz C. (2010), ―Intellectual Property Rights and Competition Policy, in Correa, Carlos M. (Ed.) *Research Handbook on the Protection of Intellectual Property under WTO Rules: Intellectual Property in the WTO*, Volume I, Cheltenham: Edward Elgar.
6. Korah, Valentine (2007), ―Competition Law and Intellectual Property Rights, in Dhall, Vinod (ed.), *Competition Law Today: Concepts, Issues, and the Law in Practice*, New Delhi: Oxford University Press.
7. Mazhuvanchery, Shiju (2010), "Indian Competition Act: A Historical and Developmental Perspective", *The Law and Development Review*, Vol. 3, No. 2, Article 8.
8. OECD (2006), *Environmental Regulation and Competition*, OECD Policy

Roundtables, available at https://www.oecd.org/daf/competition/1920007.pdf
9. Nordic Competition Authorities (2010), *Competition Policy and Green Growth: Interactions and Challenges*, available at http://en.samkeppni.is/media/skyrslur-2010/competition_policy_and_green_growth_final_version.pdf
10. Rubiano, Camilo (2013), *Collective Bargaining and Competition Law: A Comparative Study on the Media, Arts and the Entertainment Sectors*, available at https://www.fim-musicians.org/wp-content/uploads/fim_study_competition.pdf
11. Vagstad, S. (1995), *Promoting fair competition in public procurement*, Journal of Public Economics, 58 (2), 283-307
12. Noonan, Chris (2008), The Emerging Principles of International Competition Law, Oxford: Oxford University Press.
13. Taylor, Martyn D. (2006), International Competition Law, Cambridge: Cambridge University Press.

Additional information (if any)

Student responsibilities

Course Reviewers:

1. Dr. Nitya Nanda, Fellow, TERI, New Delhi.
2. Prof. Bindu Ronald, Professor, Symbiosis Law School, Pune.